

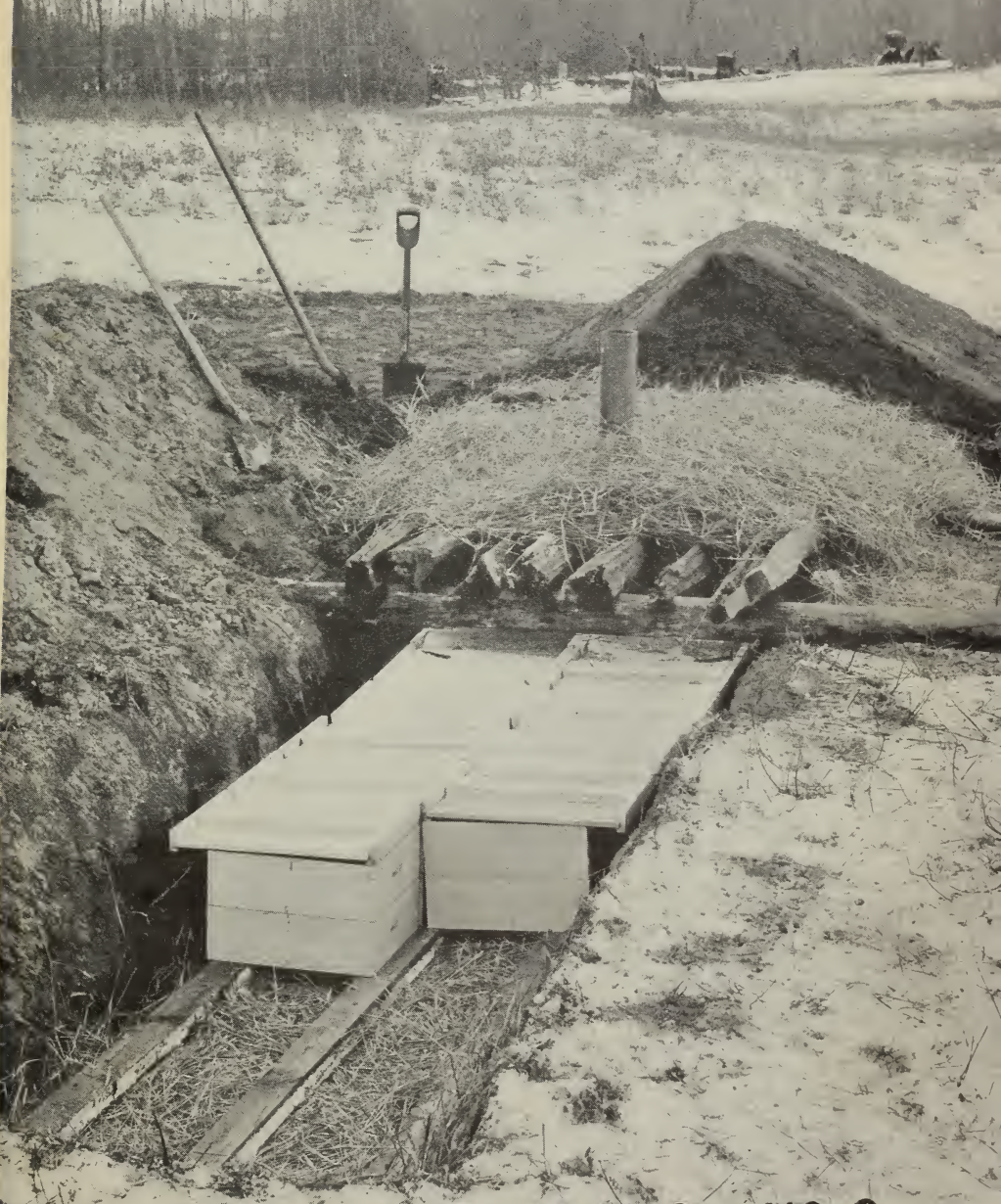
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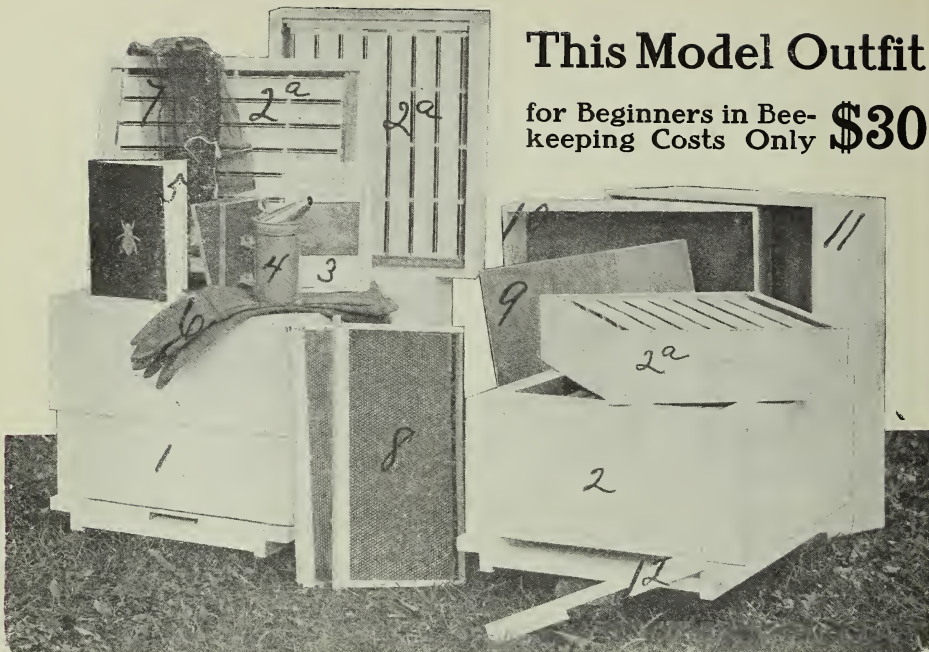
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Cleanings in Bee Culture





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Here is an illustration of a complete outfit for the man or woman who wants to make a start in bee-keeping in a small way. With every thing first-class, and ready for immediate use, and with bees of purest Italian strain (which are included), this outfit will afford a fine opportunity to study the work of these interesting little

No reason at all why this single colony should not provide an extra swarm for the empty hive the very first season, and under right conditions there will be a nice honey-harvest, too.

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THE A. I. ROOT COMPANY, MEDINA, OHIO

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Enclosed find draft for \$30.00 for which please send me Outfit No. 6, as listed above. I understand that you guarantee safe arrival and prepay all charges, if north of Ohio River and east of Mississippi River.

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G.R.C. 112

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Editorial

THE Ohio State Bee-keepers' Convention will be held in Springfield, Feb. 21. Further announcements later.

MR. GEORGE S. DEMUTH, now of Washington, D. C., in the Bureau of Entomology, calls our attention to the fact that the picture on the outside cover page of our Christmas issue was taken in the apiary of Mr. S. D. House, at Camillus, N. Y.

BULLETIN No. 75, entitled "Miscellaneous Papers on Apiculture," has just been issued by the Bureau of Entomology, Washington, D. C. It probably can be obtained by any bee-keeper by applying to the Bureau of Entomology or to the Superintendent of Documents. This bulletin comprises "The Production and Care of Extracted Honey," by Dr. E. F. Phillips; "Methods of Honey-testing for Bee-keepers," by C. A. Browne; "Wax-moths and American Foul Brood," by E. F. Phillips; "Bee-diseases in Massachusetts," by Burton N. Gates; "The Relation of the Etiology (Cause) of Bee-diseases to the Treatment," by G. F. White; "A Brief Survey of Hawaiian Bee-keeping," by E. F. Phillips; "The Status of Apiculture in the United States," by E. F. Phillips; "Bee-keeping in Massachusetts," by Burton N. Gates. It contains 125 pages the size of this. While these papers have been published heretofore, the various editions have been exhausted, and this bulletin is a compilation of them all.

A SEVERE COLD SPELL.

THE fore part of winter was mild all over the United States; but during the fore part of January the weather turned severely cold in most of the Northern States, with a driving wind. Even in semi-tropical California, the temperature has gone down to freezing and below; and there has been a desperate fight on the part of some of the orange-growers to protect their groves. This they have been doing by building fires among the trees, thus generating a large amount of smoke. The same thing has been done in Florida. At this writing, Jan. 11, there is no letup in the severe cold in any portion of the United States. It has not and probably will not continue long enough to do any

great damage to the bees. The clovers will not be injured, because there has been a heavy fall of snow over most of the North. Lots of snow is always favorable to clover.

THE CIRCULATION OF GLEANINGS BOOMING THESE DAYS.

GLEANINGS has been late for a couple of issues back; and for this issue, perhaps, we shall have to beg the indulgence of our readers till we can catch up in our printing department. We have just purchased a new printing-press, which, together with the two big machines* already in, ought to enable us to catch up very soon. We have recently installed a new linotype, or type-setting machine, and all together the printing-house of GLEANINGS is "as busy as a bee," even if it is in the dead of winter and the bees are all asleep.

New subscriptions and the renewal of old ones have been coming in with a big rush. Considering the poorness of the past season, and the bitterly cold weather we are now having, we are truly thankful for the generous support of our friends.

WINTERING BEES IN CLAMPS.

IN certain parts of the northern States the custom of burying hives of bees in the ground during the cold weather is very prevalent; but lest the uninitiated should get the idea from our picture on the cover of this issue that this plan solves the wintering problem universally, it may be well here to mention some of the restrictions which, while they have been given before, can nevertheless bear repeating.

The soil as shown at the left, in the picture, is sandy. This is a vital requirement; for in a clay soil the combs in the hives would "sweat" and become moldy, and the bees would dwindle away rapidly because of the impure air, there being no chance for escape of moisture nor for the influx of fresh air, as the clay is not porous.

Even with a sandy soil, if the winters are open with considerable warm weather when

* All of them are four-roller book-presses, and two of them have automatic Dexter feeders. In fact, we have one of the best-equipped printing-shops in the United States.

bees may fly, we question very seriously the advisability of wintering in clamps or trenches. Under such conditions the double-walled hive is the best solution of the problem; for the results secured are so uniformly satisfactory when other conditions are favorable that no better plan is needed.

This picture on the cover is another one made from one of Mr. Hutchinson's old negatives. Our older readers will recognize it as having been used before; but we considered it good enough to use again.

BEST PRICES JUST BEFORE CHRISTMAS. MARKET BECOMING MORE STABLE.

The statement has often been made that prices on honey are liable to slump after the holidays, and that it is advisable to sell as early as possible. While that is true to a great extent of Western comb honey, a change is beginning to take place. Western comb is liable to granulate, and dealers, therefore, feel that it is advisable to sell it before this takes place. But there are some evidences that go to show that the market is becoming more and more stable on extracted. While prices reach their maximum just before the holidays, honey in the liquid form will maintain its level to a great extent, not only during the early fall, but during all the winter. In early spring the prices begin to sag, in anticipation of the crop just ahead.

To a certain extent also it is becoming more and more true that Eastern comb honey is becoming more stable, the reason for this being that it is not apt to granulate till toward spring.

THE LEGISLATIVE COMMITTEE OF THE NATIONAL BEE-KEEPERS' ASSOCIATION AT WORK.

The Legislative Committee of the National Bee-keepers' Association, consisting of Mr. W. A. Selser, Mr. N. W. Saunders, and Mr. A. T. Cook, met in Washington on Dec. 12th to consider plans for the ensuing year. They spent considerable time in discussing national legislation, but at the time of their meeting decided to concentrate their efforts toward checking the rapid spread of bee diseases in the United States. While recognizing the fact that the Bureau of Entomology, of the Department of Agriculture, has rendered splendid service by spreading information concerning disease and its elimination, they felt that the Department should go even further; and to that end the committee, by appointment, called on Secretary Wilson, head of the Department of Agriculture. First, it is asked that the Secretary give his approval to a plan for reaching every bee-keeper in the United States, and placing before him information on the subject of bee diseases; second, that he authorize the publication of a bulletin showing the relation of bees to horticulture, and, third, another bulletin on honey as a food. The Secretary gave his approval to the second and third, but demurred on the first,

as he thought the government could not undertake to hunt up every bee-keeper in the country, because it was contrary to precedent, and because of the expense it would involve. The committee believes, however, that there is a precedent to warrant this procedure, and, if so, proposes to follow the matter up at a later time.

Since writing the foregoing we have received a letter from the Chairman of the Committee inclosing one from Secretary Wilson that will explain.

Mr. W. A. Selser:—Referring to your letter of December 13, with regard to the desirability of warning farmers against foul brood in bees, I beg to state that I have ordered the preparation and distribution of two press notices—one for distribution to newspapers in general, and the other for distribution to county papers, advising bee-keepers of the danger of the disease, and referring them to Farmers' Bulletin 442 on this subject. The other suggestions you make will be considered.

JAMES WILSON, *Secretary of Agriculture.*

Washington, D. C., Dec. 20.

Apparently the special committee of the National has not labored in vain.

THE NEW CONSTITUTION OF THE NATIONAL BEE-KEEPERS' ASSOCIATION.

At the last meeting of the National, at Minneapolis, a committee was appointed to draft a new constitution. This instrument was drawn up and duly submitted to the convention. While that body had no authority to accept or reject it, it could and did recommend its adoption by the voters at large. The latter have now formally ratified it, and the new constitution is in full effect.

The membership fee, instead of being \$1.00, half of which went to the local organization, will now be \$1.50, one-third of which will go to the local society. It was found that \$1.00 membership fee, only half of which went to the National, was entirely inadequate to carry on the work of the organization. While it may be an inappropriate time to raise the membership fee, the committee felt that the old organization could not longer continue on the old basis.

The new constitution further provides for closer affiliation with local societies, and each local is to send its own delegate or delegates to the National convention, wherever it may be held.

The new board of directors, instead of consisting of twelve members, is now reduced to five. The old number was too large and unwieldy, and the number five is small enough so that the board can meet together and thus properly plan the work of the organization.

Under the new constitution, there probably will not be another National convention before a year from the coming February.

Two cities—Cincinnati, and Washington, D. C.—are vying with each other for the next convention of the National. Cincinnati has the prior call; but Washington, whose invitation was extended later, sets up the claim that, if the convention goes to the national capital, it will have consid-

erable influence with the officials of the government, to the end that bee culture may receive further recognition, and with Congress, if it is in session, and, moreover, it can have distinguished men from the Department of Agriculture to deliver addresses at the convention. We understand that the new board is carefully considering the claims of the two cities.

ARE BEE-KEEPERS MAKING A COSTLY MISTAKE? A WARNING; MARKET PRACTICALLY BARE OF COMB HONEY, WITH A BIG SUPPLY OF EXTRACTED.

SEVERAL times during the last three or four months we have called attention to the fact that the production of comb honey was being dropped by many producers in favor of extracted. Just before he died, Mr. W. Z. Hutchinson, having observed the same fact, cautioned his readers in the *Review* not to make the mistake of going to the other extreme, adding that he feared the time would come when comb honey would be a scarce article, and the market would be glutted with extracted. The prediction has been all but verified. Now that the season is over, we are in position to know pretty nearly where all the comb honey is that is left; and we can assure our readers that the supply is exceedingly limited. The big buyers of the country are making inquiries as to where they can get choice comb honey; but aside from little lots, of inferior quality, they are unable to find any. Some three or four buyers have cornered some choice lots, and are awaiting an advance in price. There will be small lots here and there among retailers, but that will be about all. On the other hand, the supply of Western *extracted* honey appears to be large for this time of the year.

Our readers will remember that early in the season reports from the West were very slow in coming in. Many of them were misleading, and producers in some sections where, apparently, big crops had been produced were evidently holding back the fact. The reports from the West showed almost as much a shortage as those from the East. The result is, there is a big supply of Western *extracted*—mainly alfalfa and mountain sage; but the supply of Eastern white honey, both comb and extracted, is almost entirely exhausted.

There are two reasons to account for the great disparity between the production of comb and extracted the past year. First, breakages from shipment have disgusted many producers with the comb-honey business; and, second, the honey season throughout all the East, where comb honey is largely produced, was almost a complete failure. Eastern bee-keepers do not produce honey on as large a scale as those west of the Mississippi; and what they do produce is largely comb. On the other hand, the conditions in the West are almost exactly the reverse. Extracted honey probably forms from 75 to 80 per cent of all the honey produced.

One large buyer in the East, in talking with a representative of this journal, lamented the fact, and with good reason, that the honey reports in the bee-papers during the last year were misleading—at least so far as they related to the production of Western honey. "This has a tendency," he said, "to boost the market on all grades of honey, including extracted. The market on the liquid product began to soar, and buyers refused to purchase. Then there came the inevitable slump after prices had been boosted too high; and now the market is overstocked with extracted."

He then cited the case of a large producer of buckwheat honey who had a fair crop to sell. The general talk about the poorness of the season caused him to put his prices clear out of sight. Of course, no one would buy. He began to offer his honey at lower figures without a taker. Soon carloads of Western alfalfa and mountain sage, of a better quality, both in flavor and color, flooded the market; "and," said Mr. Commission Man, "our friend with his big holding of buckwheat would be glad to unload at any price—a sadder and a wiser man. This is not an isolated case, because some of the Western producers are finding it hard to unload."

One other buyer expressed himself most emphatically, saying, "You bee-journal fellows ought to be scored for letting some of these Western producers pull the wool over your eyes. Why don't you urge more the production of *comb* honey? If the facts as to the amount of Western honey had been given in the first place the general market would have been in much better condition."

While the bee-papers come in for a fair share of blame, perhaps, yet how are the journals going to get information when the reports of actual conditions are held back?

Referring to the first reason why bee-keepers are dropping the production of comb honey, it seems to us that almost every mail has brought some complaint about comb honey arriving in bad order, simply because it was carelessly packed. Producers who ought to know better continue to put up their goods in poorly made and badly designed shipping-cases; and, again, they often fail to ship in carriers, with the result that both producers and buyers are disgusted with the whole business. Extracted honey, however, can be shipped in barrels or cans, with comparatively little leakage or breakage. It is not injured by candying, and usually there is a fair demand for it.

But the scarcity of comb honey and its higher price should make producers wake up to the importance of producing more section honey. It will hardly be possible to get too much for the coming year. We never saw a time when fancy or No. 1 comb honey would not sell readily at good prices.

If the bee-keeper who reads these lines has reason to doubt our words, let him write in to the large markets and see how the demand now stands for comb and extracted. The fact is, brethren, we are confronted by a condition and not a theory.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

THE COLOR of honey is lighter on high lands than low; in the north than toward the equator; on calcareous than on ferruginous soils; in a wet than in a hot dry season. A peculiar fact is that a mixture of two honeys is darker than either kind separate.—*Deutsche Imker*, 308.

F. DUNDAS TODD once criticised my pictures, and I've had it in for him ever since. Now's my chance. Nine of his pictures in last GLEANINGS are bad—very bad. They're nice pictures in other respects, but he made that poor fellow stand all the while he was doing his stunts instead of giving him a comfortable seat.

CHRISTMAS was a very bright day. At 1 P.M. cellar-doors were wide open, as they had been for days, both day and night; temperature in cellar, 49; outdoors, 30 degrees. At the wall furthest from the door I read fine print—easily. Bees had been in cellar 42 days. In four minutes two bees flew out. If the room had been closed up dark I suspect more would have flown out—not because dark, but because close. The moral is that bees in a cellar that have not been confined long will stand much light *if the air is pure*. Toward spring they will not stand light so well.

THE DISCOVERY that bees eject water from nectar while on the wing was a rediscovery by A. I. Root, says Claude Deshommes, *L'Apiculteur*, p. 456, the discovery having first been made by M. Babaz in 1868. [The question has been raised whether bees ever discharge water on the wing when gathering nectar or sweetened water from outdoor feeders. It takes a little careful watching before one can see this fine spray shot out from the bees; but when he once sees it, he is able to discover it in other bees as they start out on the final flight for the hive; and while we have not absolute proof that the spray is made up of water, the facts point very strongly that way.—ED.]

ABOUT that pie. Either the printer or I chopped the head off that last Straw, p. 4, and stuck it in as the fourth Straw. No matter. You seem to think, Mr. Editor, I haven't stuck close to the text. You're right. Let's get back to it. You said moths were liable to lay eggs in S. D. House's combs or his nice comb honey after either has been taken from the hive. I supposed his nice comb honey was in sections, so I ventured the guess he never had an egg laid in them after they were taken off, since the moths don't lay eggs in comb honey here after it's taken from the hives. J. E. Crane practically says they do with him. So you'd better cut me a piece of the pie. The question now is, whether my moths or Bro. Crane's are the exceptional ones. If it's the general rule, and especially if it's the rule with Bro. House, then bring on the rest of

the pie. [It is probably true that the moth-miller is a more serious pest in some localities than in others. You of course know it is unknown in Colorado, and, if we mistake not, in all other high altitudes.—ED.]

ON FIRST READING what Arthur C. Miller says, page 755, I said to myself, "I never thought of it before; but it seems clear that those wing-stubs must hinder the queen about laying." But on further thought I recalled the thousands of queens I have had with both wings on one side cut off about half—fine layers, eggs placed regularly in cells, no vacant cells, no superseding till two or three years old, and it didn't seem possible that clipping could do so very much harm. Isn't it just possible that the queen raises her wings when about to lay, just as any other lady raises her dress when it is in the way? Wouldn't the wings of a queen show wear if they should "slide" over the surface every time an egg is laid? We know that the wings of a worker become ragged with age, and I suppose that is from friction with the air. If three or four weeks' friction of the air makes the wings ragged, would not three or four months of the greater friction of the comb make the wings still more ragged?

LOUIS MACEY, p. 734, perhaps you don't fully understand my attitude. I think my queens average as good in their second year as in their first—perhaps better. When they begin to fail, I think the bees will supersede them, whether it be in the first or the fourth year. So I don't need to supersede a queen unless she is poor, no matter what age. If others have bees that are not so good in their second year, and the bees themselves will not supersede them, that's another story. Then there's one thing you and I can't get away from: A queen in her second year is forty times as likely to swarm as in her first year. That alone may be sufficient reason for some to requeen annually. But annual requeening and improvement of stock don't go well together. [There is one fact you have not mentioned in favor of a young queen; and that is, she will lay eggs in late summer or in the fall when an old queen can be coaxed to do this only with difficulty by stimulative feeding. We would say that colonies having young queens in the fall of the year stand a much better chance of wintering through, because their hives will have a large force of young bees raised late in the season. Too many times queens stop laying after the main honey-flow; and the old bees beginning to die off leave the colony too weak to be in good condition for winter. While it is true that some old queens are too valuable to kill, we are coming more and more to believe that the average beekeeper should aim to have young queens in his apiary.—ED.]

SIFTINGS

J. E. CRANE, Middlebury, Vt.

I do not think the editor's value of drawn comb an overestimate—page 699, Nov. 15.

An unusual number of fall dandelions bloomed here in New England, the same as at Marengo, Ill., and in Canada; but they were of little value to bees.

Slowly the value of honey as a medicine is becoming known and appreciated. I am not sure but another leaflet along this line would prove of great value—p. 644, Nov. 1.

Dan White is all right about ripening honey—page 684, Nov. 15. I find that honey ripened as it should be is very difficult to strain unless warm; and even a gravity strainer will work very slowly.

I think our friend A. C. Miller is a little off when he thinks smoke from cotton will, as a rule, irritate bees, as he claims on page 664, Nov. 1. Queer, some of the rest of us bee-keepers have not noticed it.

All who wish to improve their bees can not study with too much care the article by H. D. Tennant, page 651, Nov. 1. The science of breeding (and it is a science) is becoming better understood than formerly; and those who will may profit by such an article as Mr. Tennant has given us.

Our experience corresponds with that of the editor in footnote on feeding brown sugar, page 646, Nov. 1. A few years ago we fed two or three tons of raw sugar to bees as winter food, and they wintered fairly well; but we believe the best white granulated quite as cheap and much more satisfactory.

Dr. Miller tells us that Dr. Bethune told him that a young queen could be reared and fertilized in a hive with a very old queen, page 646, Nov. 1. I believe this a very important question; for if we may rear a queen in a hive having an old one, much time will often be saved by so doing.

That metal air-spaced cover, page 699, Nov. 15, is certainly a nice thing, especially for hot sections of country, as it combines protection from rain and sun at the same time; but I should think it would prove a plaything for the wind. I have seen nothing I like better than the telescopic cover covered with metal.

Our genial friend Doolittle tells on page 650, Nov. 15, of an old man whom the bees would not sting. I have heard, during the past fifty years, of several such, but have thought such statements should be taken with some allowance; but after reading what Mr. Doolittle says, I will doubt no longer.

I wonder if Mr. Doolittle can tell us why there is such a difference in the way bees treat different people.

Arthur C. Miller tells us, page 664, Nov. 1, that when bees ripen honey they spread out all they can; but if the night is cool they go to the brood-combs just to keep their feet warm, rather than to keep their brood warm. Well! there is where we don't think alike. I still think bees care more for their brood than the warming of their feet or the ripening of honey.

We are under obligation to Mr. Holtermann for a full description of his present method of wintering out of doors, and his reasons for it, page 695, Nov. 15. Where bees can be wintered indoors perfectly, as is sometimes the case, and you have but one yard to look after, and can be always on hand to attend to it I believe there is no better way. But as cellars run, I prefer the outdoor plan; and of outdoor plans none are better than the one given by Mr. Holtermann.

THE AVERAGE YIELD PER COLONY.

On page 654 Mr. C. C. Chase tells in a letter to E. E. Colein how he secured from 20 hives and 30 three-frame nuclei 4000 lbs. of honey in "one of the worst seasons on record," while one nucleus with a poor queen gave him no surplus. Now, the inference one would draw, especially a beginner, is that if one only had choice queens, and gave his bees suitable care, he could do as well in the worst of seasons—which would be wide of the mark. Now, we who have been in the business longer know that, in very bad years, we get no such yields of honey, although we may have good stock and give them the best of care. On the other hand, in a good year even hives with quite ordinary queens, if given care, will give very good results. It often happens that, while one section is very poor, another may be good. The past season was, as a rule, very poor (perhaps one of the worst), yet there were isolated localities where the yield of honey was good. One such I am thinking of where a bee-keeper secured some 8000 pounds of surplus, mostly comb honey, from 75 hives, and increased to 115 colonies. It is also true that, with a very poor queen, we can not get much if any surplus, even in a good year. If there are few flowers, or even if there are many that yield little or no nectar, we can not get much surplus with the best of queens and best of bees and best of care. The estimate of the editor of GLEANINGS as to the yield to be expected from apiaries with good care, as given on page 678, is very much nearer the mark, or will give us a much better idea of what to expect, and I am afraid his estimate is a little too high for the extreme North.

Bee-keeping in the Southwest

LOUIS SCHOLL, New Braunfels, Texas

With every thing prepared and ready whenever it may be needed for the coming season, the bee-keeper who is so fortunate as to be so situated can stare the season bravely in the face and feel as though he would be sure to conquer, while the go-easy kind of fellow who waits to see if it will really pay him to get any thing ready at all has apparently no feeling at all. The former will meet with success if it is to be had, while the latter will meet with—well, to tell the truth, we can't tell.



TEXAS HONEY.

To show how great is the demand for our honey in our great Lone Star State we need only mention that the entire Texas crop was practically sold by the end of August. There were several small lots here and there after that, but they went in a hurry as soon as they were located. There was a demand for more, but no honey to supply it. The Southwest Texas crops were sold out long before this time, and the Central Texas producers, whose crop comes a month or two later, were overrun with orders as a consequence, when their product was ready for market. The writer's experience this year was almost exasperating at times, the orders coming in some mails numbering from half a dozen to several dozen. It was impossible to put up the honey as fast as it was demanded. It took from two to three weeks to fill many of the orders, and at the end of the season some which were unfilled had to be canceled, amounting to more than our entire crop of 67,000 lbs. Since that time orders have come in for more honey every week, but there is none to supply.

This is not only true of this year, but 1910 and 1909 were very similar, except that the season closed later last year. However, the number of canceled orders each year for several seasons has run up into many thousands of pounds. This is not only our own experience, but that of many other large producers.

There have been a few Texas bee-keepers who have shipped in honey from other States in the West, but not many, for our bee-keepers are prone to stay by honey produced in Texas by Texas bee-keepers, and, as a rule, do not care to supply any other. Then it is a fact that many consumers do not like to buy honeys that they are not used to. This is especially true of honey with a decided flavor, such as the western alfalfa. Of course, some customers do not mind a different flavor, but on the whole we know from personal experience that a preference for the Texas honey does exist.

It would be interesting to know just how much honey is annually produced and consumed in the Lone Star State. We know that the output is enormous, but we have no reliable statistics to show what it is at

the present time. One fact exists, that the greatest bulk of this honey is consumed right here at home, and very little of it finds its way into the Northern markets. Oklahoma also is a great consumer of our product. This is due to the fact that, on the whole, that State and all of the northwestern portion of Texas are not adapted to bee-keeping except in a few favorable localities; and the consequence is, the honey must be procured from Central and Southwest Texas. The consumption of honey is great in both Texas and Oklahoma, the main product being bulk comb honey, which has for many years been strictly a Texas product.



FIELD MEETINGS IN TEXAS.

It seems that the Texas bee-keepers have been so busily engaged with their extension of apiaries and the business end of their following to such an extent that no time remains that could be profitably spent in gatherings or conventions and field meetings of bee-keepers at various times during the year. Why this is, we do not know. Texas had at one time as many as eight bee-keepers' associations; but there is only one to-day, and that is not as lively as it used to be. There is something wrong somewhere, whenever those who are engaged in the same line of work neglect the social side of their vocation as found in the conventions and other gatherings.

Texas is large enough to have half a dozen bee-keepers' associations, even if some of them be small in number. Nothing can do more good in furthering the progress of the industry, and nothing brightens up and helps the bee-keeper more than getting away from home and his work occasionally and rubbing up against some of his fellow-men who are engaged in the same calling. This is one thing that should receive more attention on the part of the bee-keepers of the big Lone Star State; and to start the ball rolling, and to begin the new year properly, the writer will be glad to hear from every bee-keeper in the State who is interested in having, at some early time, field meetings or similar gatherings of bee-keepers, at which important topics pertaining to the industry may be discussed. If too busy to write a letter, a postal card will do if the name and address are plainly written.

It may be well to take this opportunity to state that the writer received some time ago the appointment as Consulting Apicultural Expert of the Texas Department of Agriculture, at Austin, and all correspondence may be sent there if desired. All persons desiring information about bees or bee-keeping may obtain it by writing to the State Department of Agriculture. Hon. Ed. R. Kone is the Commissioner of Agriculture of the Department.

BEE-KEEPING IN CALIFORNIA

P. C. CHADWICK, Redlands, Cal.

Before beginning outdoor feeding, take a look over the yard to see that there is no robbing in progress.

Light rains followed by cold, heavy, drying desert winds describe the weather conditions so far this season.

E. M. Gibson's scheme for avoiding lifting, page 721, Dec. 1, is good; but I think mine is better, for a full super never need be lifted. I will give details later.

In the sixth item of my notes in the Dec. 15th issue I meant to say that the Tremont yard is 600 feet *above the oranges*, at an actual elevation of 2600 feet, since the oranges are 2000 feet above sea-level. In flying the three miles, therefore, the bees have to ascend 600 feet, or 20 feet to the mile.

Mr. C. H. Miller's account of the swarm of bees flying 15 miles over the desert is probably correct; but it is not likely that this distance was covered in a single flight. It is more than probable, however, that their present home was located by scouts at some distance from where they took up the last leg of their journey to it.

Quoting from p. 1021 of "Honey-plants of California," "The sage-worms in cloudy weather often become abundant enough to destroy much of the bloom." It has been my observation that they are most abundant in off seasons when the sage is less thrifty; but I have never observed that the weather had any influence, and am of the opinion that it does not.

I have never known an instance where a comb was mutilated by bees in order to afford room for drone comb, page 516, Sept. 1. They always manage to build enough drone cells between the top-bars and excluders; or, if no excluders are used, often utilize the space between the upper and lower frames. If they made a practice of cutting out comb to provide room for drone-comb building the value of foundation would be somewhat less.

What would become of our great citrus-fruit industry if the growers used no more system in marketing than we bee-keepers do our honey? Do we not possess brains enough to form a marketing organization for our product? At least we need an information bureau to issue bulletins informing bee-keepers of conditions, prices, etc. As it is, we harvest our crop, sell it to the first buyer that comes along, at what he may offer. I have known buyers to pay three different prices in Redlands, on the same day, for the same grade of honey. That is business! We can not blame the

buyer for his shrewdness; for so long as we continue to be dupes we may expect to be duped.

Every one with whom I have talked or corresponded on the subject of more stringent foul-brood laws agrees that such a law would be an excellent thing—for the other fellow; but few are willing that it should apply to *them*. If this should be the general sentiment, the fellow who thinks he does not need inspecting will, very likely, wake up to the fact, sooner or later, that he has some neighbors who need it, and he will have no recourse but to sit and wait until his neighbor is cleaned out.

The Dec. 1st issue was the most interesting number of the year to me, inside and out. The cover picture, taken at Liberty, Mo., less than 40 miles from my old home, where I spent 18 years of my bee-keeping life, is a most beautiful one. I can imagine rabbit-tracks crossed and crisscrossed among the hives. Inside I find Doolittle's excellent article on excluders—one of my hobbies (if I have any)—a hobby, because it is only in recent years that I have learned its true value, and I will preach excluders as long as the present hive and system of management are used. I have neighbors who do not use them, and argue that, when the bees need room, they will crowd the queen down. That is true to a degree; but crowding should be avoided, for it causes loss of time. Besides, it takes 21 days from the egg for a bee to hatch; three full extractings are often gathered in that time by a colony, which goes to show that the brood does not get out of the way fast enough. I prefer to let the queen go where she may until two or three weeks before extracting time; then put all the brood down that you can get down, and put on the excluder.

Mr. E. M. Gibson's comments, p. 721 on decapitating brood, are sensible and to the point. They pleased me very much.

Elias Fox, speaking of bee-trees, page 731, touches a subject dear to my heart; for of all pleasures of my boyhood days (and I am not over it yet) I believe hunting bee-trees was the greatest. Did it pay? Financially, no; in pleasure and recreation, it was one of my greatest assets. I can not agree with Mr. Fox about penalizing for robbing a bee-tree and killing the bees—that is just what should be done where foul brood is prevalent.

California bee-keepers should apply to the Interior Department for permission to enter forest reserves and remove bees from trees, especially in infected areas. While driving through a forest reserve in San Diego Co. I counted nine bee-trees, from the road, while traveling a distance of two miles. They were all in hollow and decaying live oaks that were of no actual value—most of them in limbs that could easily be removed.

Conversations with Doolittle

At Borodino, New York

BEES IN THE MIDST OF BLOSSOMS.

"I must move in the spring from where I am now located, and wish to do the best possible with my bees. I should like to locate from one to two miles from where the greatest profusion of honey-producing flora abounds. It will be quite an inconvenience to me to be located in the midst of this bloom; but if the income from the bees would be enough greater to pay for that inconvenience, then I might persuade myself to locate there. Will you please tell us just what you would do under these circumstances?"

"This is quite a reasonable question for any one to ask who intends to locate an apiary, but who himself desires to be in a small town or other place not right in the midst of a good nectar-producing locality. A location in a valley full of honey-producing flora, together with rising hills on either side, covered with all manner of nectar-yielding flowers clear to their summit, two to five miles away, would be an ideal location for one who keeps bees for a living. But as it is impossible for all to enjoy such a location, and as other environments are likely to have a bearing on the decision, such as a convenient school for our children, or a business for some of the family, it is often best to accept the situation as it comes to us. And I do not think that a distance of one mile from any profusion of nectar-producing flora would make difference enough to be noticeable. I once heard the claim at a bee-convention, that a colony of bees which has to travel one or two miles from home for their stores will soon become so depopulated that the result in honey is not half that stored by colonies set right down in the midst of bloom. Another claimed that the loss of time from the young field bees in hunting for nectar one or two miles from home is almost sufficient to turn success into failure. Another, that it stands to reason that less time is lost in getting the whole force at work on the honey-producing flowers where the latter are plentiful all about the hives than if the pasture is one or two miles away.

"Probably no one can tell definitely about these matters without testing a number of colonies right in the midst of the blossoms, and an equal number one or more miles away, and repeating the test for a term of years; and as I have never done this, I can not be considered as an authority in this matter. I can only give my experience, which can be taken for what it is worth. All of my experience goes to show that those who argue that bees must be set right down in the very center of the honey-producing flora do this more from theory than from actual knowledge. I am led to believe that there would not be difference enough in the results, at the distance named, to pay for moving the apiary up to the bloom during

the time of the blooming of the flowers and back again for the rest of the year.

"The flight of bees must of necessity cover a vast area. No one, two, or three acres would give an apiary of 50 colonies even a living. I am often reminded of what a man once said to me about my bees in connection with my mother's flower-garden of about one-eighth of an acre. We were looking at a crop of about six thousand pounds of section honey I had piled in the honey-room. 'Oh, what a pile!' he said. 'No wonder your bees do well when your mother has such a pretty flower garden as I always see in bloom when I pass.' Of course, these flowers were 'right under the noses' of my bees; but not one out of ten varieties even attracted the bees; and when basswood was in bloom five miles away, not a bee was to be seen on any of these flowers; yet the sections were being filled as if by magic.

"If the flight of bees were as slow as the walk of a man, then the reasoning of our 'right in the midst of flowers' men would be more logical. I have watched our great 'Empire State' express train on the New York Central R. R., running at the rate of a mile a minute, and it passed my vision at no more rapid rate than the bees do over the hill on a still day when working on basswood from two to five miles away.

"If my questioner could see how the combs grow in the sections, the whiteness of the honey, and the beautiful cappings, as I have done when there was no open bloom of the basswood within three miles of the apiary, I think he would incline, and all the readers of GLEANINGS as well, to the same opinion I do; namely, that the so-called necessity of a short distance to the flowers, in order that success may be obtained, is little short of a myth. From many observations during apple and clover bloom I am convinced that bees go from one to three miles from home for nectar, from choice, during the summer months, during which months the larger part of the storing of honey is done, as I have seen thousands of Italian bees working on these different blooms three miles from where any Italian bees were kept, with a profusion of these blossoms all about the Italian apiary and the intervening space between.

"I have seen good crops of buckwheat honey stored when there was not a field of buckwheat in sight of the apiary, and only one field of about 12 acres within less than two miles, while hundreds of acres were white from three to five miles away. These experiences, together with having tons of basswood honey stored from the tops of the high hills from four to seven miles from my apiary during the past 40 years, lead me to feel safe in advising you to locate at the place you say will be the most desirable, rather than to inconvenience yourself by setting your apiary down in the midst of the bloom."

General Correspondence

THE ISLE-OF-WIGHT BEE DISEASE.

A Serious Disease of Mature Bees that is Doing Much Damage in Parts of Europe; an Entire Apiary of 160 Colonies Destroyed.

BY D. M. MACDONALD.

All other bee-diseases sink into insignificance in their ravages when compared with this insidious and malignant trouble. They can be fought against and overcome. We know their true origin, the nature of their development, and, from patent signs, can diagnose their presence, while preventives can be applied to check their spread or exterminate them. Like the pestilence, however, this new disease walketh in darkness, its conception and incubation come like a thief in the night. Its origin is uncertain.

In 1904 reports emanated from the Isle of Wight regarding a mysterious malady afflicting bees, virulent to an extreme, and deadly in its destructiveness. In fact, bee-keeping was quite wiped out in this lovely island by the season of 1908. Worse still, that year reports reached our journal, showing that distinct symptoms were manifesting themselves in various parts of Hampshire. That and the following season saw whole apiaries affected—several so seriously that they were exterminated. Outside the infected area bee-keepers were inclined to minimize matters at first; but soon alarm spread when it was realized that, as a consequence of the dissemination of swarms from the infected area, the disease had spread in 1909, not only to the southern and mid-land counties but also to the north of England and even to Scotland. Even then the deadly nature of the malady was not fully realized, and combs from infected hives were freely inserted into colonies hitherto immune, while swarms and driven bees were hived on the works whereon bees had died. Consequently the disease spread. The infection, too, passed on from hive to hive. The fell destructiveness may be guessed when it is stated that in one season an apiary of 160 colonies had every hive empty. Another, the other day, was reported to have 84 out of 86 all dead. Thousands of such specimens could be given. Some claim that treating the bees by shaking, as in a case of foul brood, and compelling them to work out new combs, will cure. Others go to the other extreme and maintain that healthy bees may be run on the diseased combs and continue healthy. Practical experience during the last three years convinces the writer that both claims are fallacious. Time and again both plans have been tried, only to end ultimately in failure. All recommendations have been tried, but none have proved fully effective.

The best advice that can be given in the light of our present knowledge is to destroy every thing movable in the hive; singe

the interior effectively, and thoroughly disinfect every thing. Dig the ground all around and bury or burn every bee seen lying about. Even then a new start should not be made on the same ground if it is possible to secure a fresh site.

As a sample of the rapidly destructive power of the disease, stocks as powerful as they could be in early June, this year went down so rapidly that, instead of filling ten frames and three supers, they deserted all but the lower crate a month after infection, in spite of splendid breeding; and at first it appeared that every egg laid came to maturity, for it must be remembered that, unlike foul brood, this disease does not affect the larva pupa nor even the perfect imago. It seems evident, indeed, that it is only when bees go out as foragers that the workers are infected. Breeding all July, during the delightful summer weather experienced, went on apace, and for a time hopes ran high that the colonies might work out their own salvation; but these hopes were dashed to the ground when, in September, on return from holidays all were found dead or dying. The miserable plight of the remnant was deplorable. Worse still, neighboring hives all around showed the well-known symptoms, and now most of those left are dwindling rapidly in spite of all attempts at cure. Earlier destruction would have been a kindness!

The symptoms at first are indistinct, so that the scourge has a deadly hold before any very clear signs are patent. A marked decrease in the number of bees occupying surplus chambers shows something is amiss; fewer bees go out foraging; even the bees which are apparently healthy show a disposition to loiter about, and exhibit a disinclination to go to the fields. Therefore large numbers are found lolling about on the flight-board—so much so that on a fine day it is black with them, as if they were in need of more room overhead. An examination of the top super, however, shows it quite deserted, owing to lessening numbers.

On close inspection an odd bee at first is seen flying aimlessly about. It or others may be seen crawling on the ground near the hive, making ineffectual attempts to fly. Looking more closely the wings are seen to make futile efforts to buoy the insect up into the air. On examining these bees it will be found that, generally, one of the small wings (almost invariably the left) may be seen sticking out at an angle above the front wing in an unnatural way, and looking as if it were dislocated. These bees then crawl about aimlessly, dragging their legs in a crippled way. They congregate in small clusters, numbering from half a dozen to a score, as if seeking mutual warmth. Many of them make feeble attempts to climb up any vegetation growing near, but after a time they fall down to die. While crawling about, the abdomen is heavily de-

pressed. It appears of abnormal size, and drags as if too heavy to be fully supported. In this advanced stage of the disease the interior of the hive, if examined, shows a sorry spectacle. The bees display none of the well-known energy so markedly symptomatic of a colony in full health during the active season. Breeding is, however, encouraged to a late period; but with the decreasing numbers it wanes until at last queens are entirely neglected and cease to lay. Then the rapid diminution of the numbers is most marked.

Examining a diseased bee, even with the naked eye, the abdomen appears abnormally distended. The bee seems unable to support the heavy burden caused by the excess of faecal matter. This, under the microscope, is found to consist largely of undigested pollen-grains, particles of wax, and the usual excrementary matter; and here we have a very large number of bacteria. On removing the digestive organs the colon is found abnormally distended, and the contents are very varied in color, smell, and substance, these features differing very considerably according to the season of the year. During summer time, tops are heavily spotted with a thin bright-yellow eviction. At other times it is drier and browner, while in winter and spring bees void a foul, brown, evil-smelling excretion over all the combs, frames, and the front inner walls. Here is, undoubtedly, the source of infection in many cases, when the trouble once finds a lodgement, for all this fouling contains a prodigious number of infective bacteria ready to be carried by robbers to all surrounding healthy bees. The hive, interior and exterior, as well as all the surrounding area, is, in fact, a hotbed of infection.

The trouble may break out in a hitherto healthy colony at almost any time of the year. During such a fine summer as we enjoyed this season, the bees battled long with the ailment, keeping it at bay by rapid breeding; but in winter and spring, with scant numbers present they dwindle rapidly and soon die off.

Innumerable causes have been guessed at in the past, but full investigation exploded the numerous theoretical conclusions. Many cures, too, have been suggested, but none have proved thoroughly effective; so that the originating cause and the true cure have yet to be discovered. It is an undoubted fact that many of the symptoms appearing on the surface are very similar to those which manifest themselves in May pest, malignant dysentery, paralysis, and *Nosema apis*. Indeed, the latest conclusion came to by Dr. Malden would lead to the decision that all of these may resolve themselves into kindred diseases. If so, the painstaking investigations of Drs. Zander, Burri, Maasen, Phillips, Malden, and others, may aid us in solving the problem. The remarkable series of about one hundred studies of *Nosema apis*, by Dr. Zander, should be a priceless guide to other students of this disease.

Whether the inciting cause or not, the latest anatomical investigations in this country reveal a prodigious number of these protozoons in various stages in the cell lining of the alimentary canal, and particularly in the colon of many if not most bees suffering from this disease. Our lethargic government Department of Agriculture has at last taken up the subject of bee diseases, and hopes may be entertained that the long and painstaking investigations now going on may soon bear some fruit, as a result of which the disease may be successfully battled with and overcome.

Banff, Scotland.

MY EXPERIENCE WITH SUPPORTING FOUNDATION TO PREVENT BUCKLING.

A Combination of Wires and Splints Gives the Best Results.

BY CHARLIE BROWN.

When I began bee-keeping in 1901 loose wiring was advocated; that is, using wires not tight enough to sing. They were expected to go down with the foundation, but I found that combs so wired would be badly stretched along the top part, and also that, while new, they were much inclined to break along each wire while being extracted. I concluded that such a way of wiring was useless, and some older bee-keepers told me that all wiring is useless; so for some time I did not wire frames at all. However, in 1909, during the honey season we had a few days of extremely hot weather. I had given the bees a great deal of foundation just previous to the hot spell, and a great many of the newly drawn combs went down altogether, and nearly all of the rest were badly stretched along under the top-bar, and buckled out of the frame at or near the bottom. (These combs were built out in the supers.) Scarcely any of the combs that I had built that season were fit to put into the brood-chamber. That convinced me that combs need support.

Next I tried splints as per Dr. Miller's plan, putting them on the foundation out of hot wax; but I found that the bees would gnaw at them where they came to the bottom, following them up, and in many cases ruining the comb; also that the foundation (medium brood) would sag and buckle in between. I next tried shorter splints, letting them come within an inch or an inch and a half of the bottom of the foundation. Bees do not seem to be inclined to gnaw short splints, but the combs near the bottom would be badly buckled in and out.

Last season I did considerable experimenting with wires and splints together; and with four tight wires and four splints I got combs good enough, I think, for all practical purposes. Three wires and four splints did not give me good combs. Four tight wires alone let the combs stretch at the top and crush near the bottom; and right here let me say that I had the wires as tight as I could get them, having driven some $\frac{3}{4}$ -inch

brads into the edge of the end-bars right by the piercings. When the wire cuts into that brad it can go no further, and one can get them so they will sing and stay tight. Of course it is some trouble to drive a brad into the end-bar by the side of each piercing; but it is much quicker and better than driving nails through and then bending them into a hook with pliers, as I have seen some bee-keepers do. Of course you have to be careful to get the brad on the proper side of the piercing; but that is no trouble after you get accustomed to the work, and you can put them in much faster than you would at first think. I do not mean to say that the wire brads are absolutely necessary; they merely help to keep the wires tight.

To sum up, I would say that, for a frame that is square or nearly so, such as $11\frac{1}{2} \times 11\frac{1}{2}$, six tight horizontal wires will result in nice straight combs. Five will not. No splints are necessary. For a frame like the Langstroth, where the wire has such a long stretch, I shall continue to use four wires and four splints until something better is devised. I have not tried it, but I believe that five tight wires, equally dividing the space between the top and bottom bars would give good combs if they were built out in the brood-chamber. I do not think we can get perfect combs built on foundation; but we want them so nearly perfect that a queen can lay a worker egg in every cell if she so desires. I confess that I do not like the splints, and am wondering whether a little heavier wire, say 28, would not render them unnecessary. Possibly some one has tried it, and can tell us about it.

Right here I want to leave my subject long enough to say that I think that what we call the Madary top-bar out here is a thousand miles ahead of your wedge and groove. It has about a quarter of the under side of the top-bar sawed away, and the cleat is kept to put the foundation in with. You put your splints in flush with what is to be the top edge of the foundation, and then nail it in, splints and all. My experience with wedge-and-groove top-bars leads me to agree with that man who some time back hit them such a hard smash.

Piru, Cal.

[You will find that H. E. Thayer has been using baling-wires in place of splints with very satisfactory results. See page 554, Sept. 1st issue for last year.

The form of top-bar put out by Madary was first advertised and sold by E. Kretchmer, of Red Oak, Iowa, some years ago. There are many who prefer it.—Ed.]

OUTDOOR WINTERING IN WEST VIRGINIA.

Fifty Pounds of Honey Required.

BY W. C. MOLLETT.

I notice that most bee-keepers in the Northern States give the amount of honey necessary to winter a colony, either in the open air or in a cellar, as from 15 to 30 lbs.

Now, this locality is not very far south, and it would be necessary to double the above figures in order to be sure of enough stores for successful wintering. Of course, all the bees in this latitude are wintered in the open air, as the cold is neither so lasting nor severe as in the Northern States. As a rule, bees can fly every few days through the winter, and it is not common for them to be kept in by cold more than 10 or 12 days at a time. Very often they will begin to carry in pollen in January or February, and begin rearing brood. It is for this reason that they require a much greater amount of stores than in the North. I have sometimes found several combs containing brood the first of February; and by March 20 they are sometimes strong enough to swarm if the season permitted it; and I have had swarms come out in April. As there is no nectar to gather until May, it is surprising how fast the honey in the hives is used up. I have had colonies that had every comb in ten-frame hives as full as they could be in October, and yet they would be upon starvation in April. Estimating each comb to hold 5 lbs. of honey, this would be a consumption of at least 50 lbs. If it requires as much more in proportion in the States to the southward, it must require at least 75 lbs. in such States as Alabama and Georgia; but as the honey-flow would naturally come earlier there, this would offset this to a considerable extent. As a rule I would estimate that twice as much honey is necessary in outdoor wintering as when they are wintered in the cellar.

FRAMES HARDER TO HANDLE, AND SWARMING WORSE WHEN THE DANZENBAKER HIVES ARE USED.

Three years ago I was induced by the favorable reports to transfer my bees into Danzenbaker hives, as they were highly recommended for the production of comb honey. I thought that, as I produced only bulk comb honey, they would be just the thing for my use. Of course, on account of the difference in the size of the frames it was a somewhat difficult task to transfer them. After I had them put into Danzenbaker hives the first trouble I struck was the difficulty in handling the frames; and as the colonies became stronger the job became more and more difficult, until it was almost impossible to handle frames without killing bees. I had never realized until then the advantage of the Hoffman or Langstroth frame as to easy manipulation. I saw then that I could handle the frames of two Langstroth hives easier and quicker than I could one Danzenbaker. When the honey-flow commenced, the bees commenced swarming; and they kept it up right along all through the honey-harvest. In strict justice to the Danzenbaker hive it is only fair to say that I secured about as much honey as usual, and it was very nice honey—possibly a little better appearance than usual. But I was glad to go back to the Langstroth or dovetailed hive, and did so just as soon as I could. Since then I have secured about the same amount of honey with not half the

trouble, and I would not use the Danzenbaker hive if I could get them free of charge; and I am firmly of the opinion that those who adopt them are making a serious mistake. The bees also have to be fed in the fall or spring, as the hives do not hold as much honey as the standard hive, and this makes more trouble.

Stonecoal, W. V., Nov. 25.

JAMES HEDDON—BEE-KEEPER, INVENTOR, JOURNALIST, AND BUSINESS MAN.

Some Unwritten History.

BY E. R. ROOT.

Little did I think, when I recorded the death of four prominent men whose names began with H, in our Christmas issue, page 743, that there was still one more whose name also began with H. The last mentioned was James Heddon, who died Dec. 7 last. First there was Hutchinson, then Hilton, Herlong, Hall, and now we add to the list Heddon. Besides the fact that all of their names began with H, it is also significant that three of them lived in Michigan. We hope the year 1912 will not take away so many of our leading lights.

Twenty years ago Mr. James Heddon, of Dowagiac, Mich., was one of the most brilliant lights in all beedom. Sometimes erratic, he often surprised us by his genius. He certainly was a man of many parts and varied ability.

At one time he had between 700 and 800 colonies of bees, and he made them pay, as he did every thing he undertook. He was a practical bee-keeper, and from the year 1875 up to 1890 he was a more or less frequent contributor to the bee-journals. His style was clear and clean-cut, forceful, and, on occasions, caustic. Many of his sayings were epigrammatic. He was not a man to follow in the beaten tracks of others, and we therefore find him striking out into new fields in practical apiculture. In short, he was original if he was any thing. This very independence of action often led him to differ radically with his brother bee-keepers in regard to methods and appliances.

As I look back over those old days of 25 and 30 years ago I see him as if it were yesterday. I see him telling of a short way of transferring from box hives to modern hives—a method that has come to be known as the "Heddon short way of transferring" in our text-books, for indeed it is now the method most used by practical bee-keepers. I see him exploiting his pollen theory—a theory that has not been vindicated these later years. I see him explaining a method for controlling after-swarms—a method that has also been accepted in our text-books. Again, I see him recommending flat covers, and hives without porticos, eight-frame rather than ten-frame. Closely identified with this hive was his slatted break-joint honey-board—a device that entirely eliminated the brace-comb nuisance. We still find

it in the form of the wood-zinc honey-board; but without the zinc it gave way to the thick top-bar in brood-frames. When reversible frames were the fad in 1884 Mr. Heddon brought out one of the best reversible frames invented, and paved the way for the alternating of shallow frames, and now we see him in 1885 bringing out his divisible-brood-chamber hive, around which centered so much (I might say bitter) controversy between 1885 and 1890. If ever a hive was praised and smashed all into smithereens by friends and enemies it was the Heddon divisible-brood-chamber hive. The discussions in those days regarding this hive would fill a good-sized volume. Part of it related to the practicability of the invention, but more of it had to do with its priority and the validity of the patent covering it. While it looked at one time as if the hive would sweep every thing before it, because the idea of "handling hives" instead of frames, and alternating whole brood-sections of frames instead of reversing frames individually looked particularly attractive, the divisible-brood-chamber principle, while still favored by a few who still use it, likewise reversible frames, has all but disappeared from the apicultural horizon. *Requiescat in pace.* I hope the apicultural world will never again see such an "irrepressible conflict" as followed the introduction of the divisible brood-chamber and reversible frames. It is so fresh in my mind because it was at the very beginning of my editorial management of this journal.

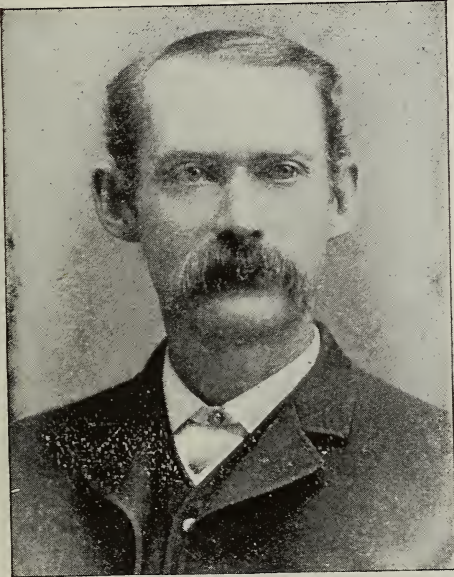
On p. 645 I referred to his early idea of extracting honey from combs without opening hives.

In later years I see Mr. Heddon advocating the slip-gear for honey-extractors. Whether he was the first to see the advantage of an arrangement that would allow the propelling part of the extractor to become disengaged from the reel, I do not know; but I do know that the principle has been applied to all modern honey-extractors except the cheapest.

During the latter part of the '80's Mr. Heddon was editor of a bee-journal which was a supplement to his paper, the *Dowagiac Times*. In this Mr. Heddon thrashed his opponents to a finish. During the early part of the '80's he brought out his book, "Success in Bee-keeping." This attracted considerable attention at the time, principally because of its advocacy of new principles in hive construction. The book is now out of print.

Later on we find Mr. Heddon entering the field of civic affairs, during which he became mayor of Dowagiac, and editor and proprietor of the chief organ of his party, the *Dowagiac Times*. During all this time his interest in bees continued to be unabated until the latter part of the '90's, when he seemed to drop out of apicultural matters entirely. A little later on he became the inventor of a new kind of minnow bait that seems to have been a great success. The Heddon Bait Co. is still doing a big business.

As a bee-keeper Mr. Heddon could and did look ahead of the most of us. Indeed, I think I never ran across a man who could catch on to a new trick of the trade quicker than Mr. Heddon. While not all of his ideas panned out as he hoped for, he left his strong personal impress on the apicultural world, and bee-keeping literature for years will contain much of the name of James Heddon, because he was a great bee-keeper and a promoter of ideas that still hold sway. Very few men who have risen to prominence in the apicultural field could ever be called a genius; but I think we can say, without fear of successful contradiction, that, if there ever was a man who deserved that title, Mr. Heddon was the one.



JAMES HEDDON.

Mr. Heddon was, perhaps, misunderstood by some of his opponents in discussion. He appeared at times to be like the gladiator of old, who, when his opponent was down, seemed to have a ghoulish glee in sticking the knife in deeper and giving it a twist. This was a mistake, as the following incident, perhaps, will illustrate. At first I thought I would not tell it; but as it shows another side of Mr. Heddon's character I think it ought to be told.

During the days of the "irrepressible conflict" of which I have spoken, there was a war of words between myself and Mr. Heddon over the priority of his invention which I think now was, in part, at least, unjustified, because it might encourage some to trample Mr. Heddon's moral rights under foot. I contended, as an examination of his claims will show, that his patent, granted Sept. 29, 1885, was very narrow in its scope; that it did not cover the general principle

of the shallow hives or divisible-brood-chamber hives, and that, therefore, he had no more legal right to claim *all* divisible-brood-chamber hives or shallow hives than a squatter on a quarter-section of land had a right to claim the earth; that his patent was limited to the use of closed-end frames in a close-fitting brood-chamber in combination with thumb-screws; that a divisible-brood-chamber hive without any one of these elements to complete the combination were free to the public. He naturally concluded that this argument, advanced by me, meant that we, as manufacturers of hives, had in mind putting a divisible-brood-chamber hive on the market that would *evade* his patent; and I confess that that would be a natural inference. But that thought was not in my mind; and the subsequent history of our business shows that we did not put any divisible-brood-chamber hive on the market until after his patent expired, as we felt that Mr. Heddon had certain moral rights; and that if, in these later days, he had shown that the divisible-brood-chamber hives were labor-savers, it would be but fair that we respect those rights.

Well, it was during this discussion that Mr. Heddon felt that A. I. Root was about to purloin his moral rights because he could do so on account of the legal limitations of his patent. Smarting under this sense of wrong, I remember particularly one bitter letter that he wrote and addressed to my father and me. Father then was very sick with fever, and we did not think he would live. I replied something like this:

Mr. Heddon.—Your letter reaches us just as my father seems to be at the point of death. I have neither the heart nor inclination to reply, any further than to say you have surely misunderstood the attitude of both of us in the matter.

Back came the quick response, or as soon as Uncle Sam could deliver the message, in the shape of a letter reading about like this:

Dear Mr. Root.—I sincerely beg your pardon. I did not know your father was very sick. I desire to recall what I said—every word of it; and I assure you that, if you mean what you say, I will say no more.

While these may not have been his precise words (for remember that was over 20 years ago) yet they convey the thought. Mr. Heddon, true to his word, never referred to the matter again, and the hive question, at least, was settled for all time.

My only reason for repeating it here is to show that Mr. Heddon had a big heart when the heart-strings were touched.

Moral.—We often fight over something that we fancy has extraordinary value when it has not. The divisible-brood-chamber hive or the shallow hive was thought to save half the labor in handling bees. It has been tried in the balance of Father Time, and, except in the hands of a few experts, has been found wanting. Think of the pages upon pages of printed matter, to say nothing of the volumes of correspondence and time that was wasted. Think of the ill-feelings and misunderstandings that might have been avoided.

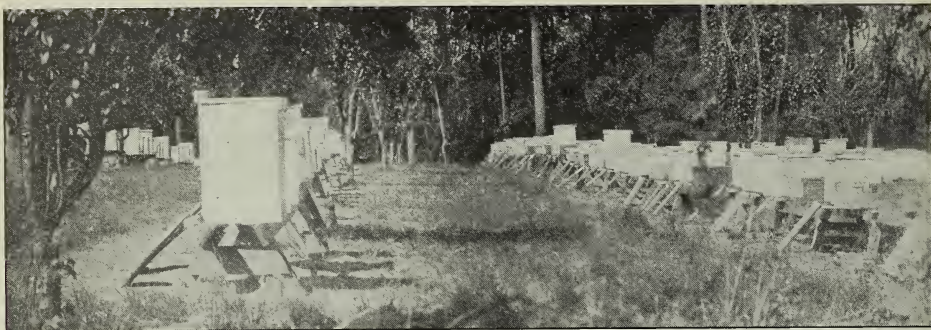


FIG. 1.—Marchant's home yard of 400 colonies. Along the Appalachian River as many as 500 colonies can sometimes be supported in one yard. He has had as high as 600.

BEE-KEEPING ON THE APPALACHICOLA RIVER.

Something More About that Wonderful Honey Country; the Extent of the Tupelos; the Suwanee River, Famed in Song; Orange-growing Successful in Northern Florida where it Often Freezes Hard.

BY E. R. ROOT.

In our Dec. 15th issue I told something about the wonderful Appalachian River, a region where nearly 2000 barrels of honey has been produced in a single season from an area that is smaller, I venture to say, than almost any other area that has produced only one-fourth of that amount of honey. Our friend A. B. Marchant, at Marchant's Landing, where I showed that big row of barrels on page 753, is almost in the heart of this wonderful bee country along that remarkable river, fringed as it is with the honey-bearing tupelo.

In this connection permit me to say that, so far as I can ascertain, the tupelo grows along the banks of all those rivers of North-western Florida, including the Suwanee River, made famous by that song that for many years has charmed millions and millions of people. If it is true that the tupelo and the gallberry grow in these regions it is a wonder to me that bee-keepers of the country have not known more about this territory before; and it is a greater wonder to me that Northern people should be flocking to the north and east coasts of Florida, where most of the lands are poor, when the soil in Northwestern Florida, at least along these rivers, will grow practically any thing and every thing. For the last few days I have been eating oranges sent me by my friend Marchant, near Marchant's Landing. When I saw his beautiful orchard where he had taken off time and again from 1500 to 2000 boxes of oranges, I said, "Why, I didn't suppose you could raise oranges as far north

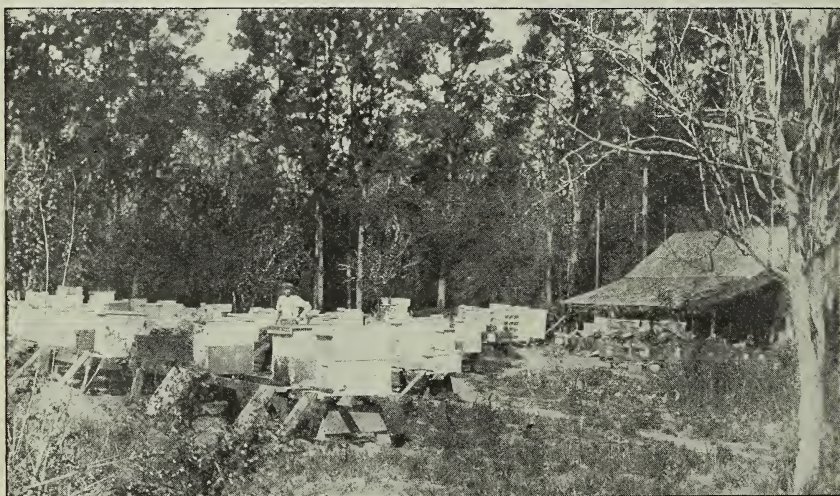


FIG. 2.—Another view of the home yard, showing the extracting house.

as this. I supposed that the heavy freezing that you get here from time to time would utterly destroy the trees."

"Nonsense! It is a little more work and care, but we think our Northern Florida oranges are much sweeter," he said. "Hard freezes years ago did us damage, but we have profited by experience."

Here was an orchard 12 years old that has stood all kinds of freezes. Indeed, I understand that the man who knows his job, the soil, and the locality, can select a variety that will stand hard freezing, and, what is more, he can work the scheme of outside furnaces that are employed successfully in the more southern portions of Florida to keep off light freezes. The oft-repeated statement, that oranges can't be grown successfully above the freezing-line, is a joke according to these northern growers. But I will have more to say about this at another time.

Let us now look over Mr. Marchant's apiaries and his hive-stands. First, Fig. 1 shows a general view of the home yard of 400 colonies. Just think of it! 400 colonies in one yard year after year! That shows what the tupelo can do. Fig. 2 shows the same yard from a different angle, taking in the shop and the honey-house where the extracting is carried on. This yard is located close to the boat-landing that I showed you on page 753, Dec. 15. When the barrels are filled with honey at the extracting-house shown at the extreme right, Fig. 2, they are rolled down to the wharf and finally put on the boat. They are then carried by water clear to the city of New York at a freight rate of only 38 cts. per 100 lbs.

"Why," said I, "Mr. Marchant, you fellows down here have a snap. You are clear off in the woods, in a country that is not overstocked, and yet you are almost next door to one of the biggest cities in the world—New York."

The secret of it is, there is the Appalachian River deep enough for big boats open-



FIG. 3.—Marchant's hive-stand.

ing up into Appalachian harbor, then into the Gulf of Mexico, and finally into the Atlantic. By glancing at Figs. 1 and 2 you will see the tupelos in the background right along the edge of the river bank. These trees, together with other gum-trees, skirt the edges of this stream for over 100 miles. Emptying into the Appalachian are dozens of other but smaller streams. Up one these (what is known as Owl Creek) Mr. Marchant has another yard of about 400 colonies. In fact, I could imagine that dozens of yards could be located clear up along this river and its tributaries without any danger of overstocking, simply for the reason that the country is so new, and that the great mass of bee-keepers have never known of this wonderful territory where such beautiful white honey that does not candy is produced by the shipload.

But the question is asked, "Why are there no more bee-keepers and bees along this river if all you say is true?"

Largely, I understand, because it is difficult to find a good spot to put an apiary on ground above high water, and then malaria and mosquitoes are prevalent in many places along the river. In our next issue I will give you some snap shots showing whole apiaries on the river, located up on stilts.

But let us go back to Mr. Marchant's home yard. We notice that his hives are put up on high benches. This is not on account of high water, but for convenience in working and to avoid harboring-places for ants. We observe, also,



FIG. 4.—Marchant's scheme for weighing his honey with a large pair of steel-yards and grab-hooks.

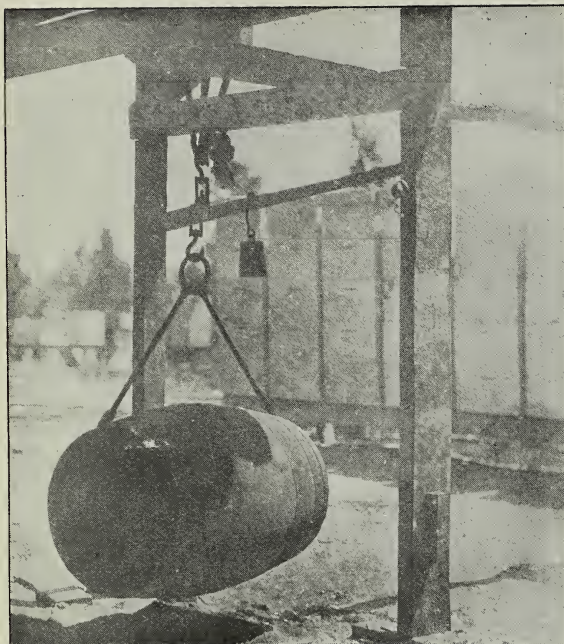


FIG. 5.—A closer view of the grab-hooks for catching the barrel while it is being weighed.

that the grass has been cleaned off so that the ground is level like a brickyard. In front of every hive is a board running from the ground clear up to the entrance. Notice Fig. 3, which shows the details of the hive-stand as they are made at the Owl Creek yard. This cleaning off all the grass is largely for the purpose of keeping away ants that are so destructive in most localities in Florida. Mr. Marchant thinks there will be no trouble from this pest provided the ground where the apiary is located is kept free from all boards, rubbish, vegetation, and shrubbery, including trees where the ants are apt to form their nests. Later on I will show you something how these ants make nests in trees, and what fine chicken feed they make.

MARCHANT'S UNIQUE SCHEME FOR WEIGHING HIS HONEY.

Let us now step under the shed in front of Mr. Marchant's honey-house, shown in Fig. 2. Here we see a mammoth pair of steelyards; and connected with them is something that looks like ice-tongs. See Figs. 4 and 5. This scheme for weighing honey in barrels by means of big steelyards beats any thing else I ever saw. They cost only \$3.50, and then all that is required is a long pole, a support overhead, and an iron ring having attached to it two iron rods with hooks on the end.

We will say we are now ready to weigh up our honey. One man steps over to the end of the long pole; the steelyards are attached while the second man rolls the bar-

rel under the pair of iron hooks. The steelyards are dropped down until the hooks catch over the ends of the barrel. The barrel is then raised just enough to clear the ground. The weight is taken, when the next barrel is weighed in the same way. The whole thing is shown in Figs. 4 and 5. It is a great scheme, and I am sure it can be employed to advantage by other bee-keepers.

MARCHANT'S SCHEME FOR SHADING HIVES.

In Fig. 6 we have Mr. Marchant's scheme for shading hives. The ridge piece is made of inch lumber a little longer than the hive, with cheap shingles nailed on to it at right angles to each other, as shown in the illustration. This kind of shade-board is very cheap, and its shape gives a little better circulation of air between the shade-board and the top of the hive than the ordinary arrangement lying flat on the hive.

Fig. 7 shows a four-story ten-frame colony operated for extracted honey. You will notice this stands up on scales for recording the honey-flow. The hive next to it has three stories. Every modern yard nowadays has a scale hive; and as the honey-flow begins to taper off, the bee-keeper will modify his plan accordingly.

In our next issue I hope to show you apiaries up on stilts on that same Appalachicola River, and a few snap shots showing the river itself. I shall also have something to say about the advantage of a river for transporting bees to new pastures.

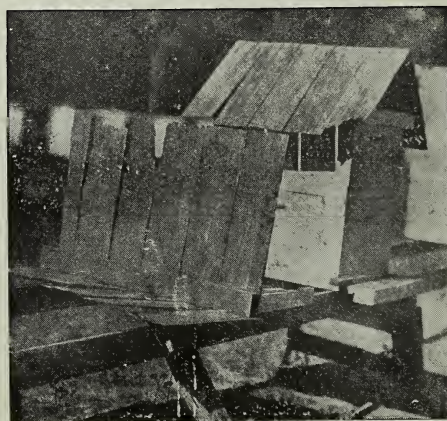


FIG. 6.—Marchant's shade-board. This provides better ventilation than the ordinary flat shade-board.



FIG. 7.—Marchant's scale hive. There ought to be a hive of this kind in every large yard to keep tab on the honey flow.

CAPPING-MELTERS NOT NEEDED UNTIL THE END OF THE SEASON.

BY E. L. HOFFMAN.

To use a capping-melter during the extracting season adds work at a time when the bee-keeper has more than he can attend to, without any material advantage. Of course, not so many objections can be raised when extracting is done at the home yard altogether; but after arriving at an outyard it takes some time before the melter is hot and ready.

The honey that flows from it near the close of a day's run is not very salable; and nearly all honey taken from a melter is injured in flavor and color. The first gallon or two coming from a melter is of almost perfect quality; but as soon as refuse begins to accumulate in the melter the honey is injured. In melting the cappings from new combs it will be near the close of a day's run before there is much difference in the color of the honey; but the flavor is slightly changed from the first.

At the close of a day's run, there is a great deal of refuse, wax, and poor honey in the melter that must be emptied into some other receptacle to be worked up later for the wax it contains. Emptying the melter and getting it ready again for another run must be done at the close of a hard day's work, when the same time should be used in getting home for as much rest as possible. If this work is left until the next morning, too much time will be lost when the help is on hand to go to work.

The heat generated by a melter is also very uncomfortable for the operator.

I intend to use next season a Townsend uncapping-box to be carried from one yard to another. The cappings are to be taken from the box and left in a receptacle built for that purpose, one at each yard, in which the cappings can drain until the close of the season, after which time they can be collected and hauled to the home yard, to be melted up when time is not worth so much. If you know of a better plan I shall be under obligations to you if you will outline it to me. Janesville, Minn.

[For some time we have been of the opinion that the solution of the problem lies in draining the cappings in large tanks during the busiest part of the season, and then melting them up later, when they contain a relatively small amount of honey, and, too, when time is less valuable.—ED.]

CHAINS TO KEEP TIERED-UP HIVES FROM BLOWING OVER.

BY A. V. POLLOCK.

I am sending you a photo of a part of my apiary, situated right in town. My wife and I have veils on, and my daughter is sitting on a stump. I have built a frame house having a stone foundation under it which makes possible a good cellar for wintering bees.

The log-chains shown, I put over the tiered-up hives, thinking they would keep them from being blown over in storms. We got 1500 lbs. of honey from 16 colonies last year. We have plenty of willow-herb, red raspberry, basswood, and red, white, and alsike clover.

Mattoon, Wis.



A. V. Pollock's apiary in the town of Hutchins, Wis.



FIG. 1.—L. E. Evans' apiary, Onsted, Michigan.

BEES FURNISH MONEY TO BUY 160 ACRES OF LAND.

BY L. E. EVANS.

During the early '80's I purchased a colony of black bees in a shoe-box for six dollars, and at once had the bee-fever, from which I have never recovered. At one time I had as many as 500 colonies in three yards. The three last seasons have been quite poor; but I have managed to get from \$400 to \$800 each season. There certainly is money in bees, as well as pleasure. I have made enough from them to buy 160 acres of land, as good as can be bought in my section.

I have been much interested in the various articles and illustrations describing paper cases for wintering bees on their summer stands. I have experimented considerably along this line myself the past four years, and have succeeded in working out a

method whereby I can winter my colonies one season with another as well as though they were in a cellar. I use insulating paper, and pack each colony by itself in planer shavings.

Fig. 1 shows my apiary with the workshop and honey-house in the background. I make all my hives, sections, shipping-cases, etc. Fig. 3 shows the interior of my shop with the various machines. I have a V-grooving machine for sections, a 24-inch planer, a rip-saw table, and sander.

Onsted, Mich.

A HIVE-LIFTING DEVICE.

BY JAMES M'LEAN.

I have nearly forty colonies of bees at present, packed in drygoods-boxes that I bought at the stores, altering them so as to have a slanting roof. I could not get any

one to help me put them in the boxes, so I had to invent some way to do the work alone. I made the frame that you see in the picture, and got a pair of small double-tackle blocks from a neighbor; and by moving the machine myself I managed the whole business without any help from any one.

You will notice that I have a hive raised up ready to slip the box under, and then let them down carefully into the box. Of course



FIG. 2.—Honey-house and shop with the apiary in the background.

I stand on the ground to do the work, being perched up there only while the picture was taken. I send this to show how any one can keep bees in a city or village. I have never had any trouble about keeping my bees, as they simply let people alone as long as they keep away from disturbing the hives. The next neighbor east of me has a path through my bee-yard, as it is nearer for them to the postoffice and stores. There are dozens of people traveling this path nearly every day, but we never have any trouble from the bees.

I sell the most of my honey from the house at retail, in 4x5 sections, and can keep it a year without candying in the attic of my house. I am in my 70th year, and have kept bees for about fifteen years.

I failed to pack my bees one winter several years ago, and lost them all but three colonies. I use the Hill device packed with leaves and planer-shavings, and have never lost any, to speak of, when they are packed as described.

Hemlock, Mich.



FIG. 3.—Interior of shop, showing small planer, saws, etc.

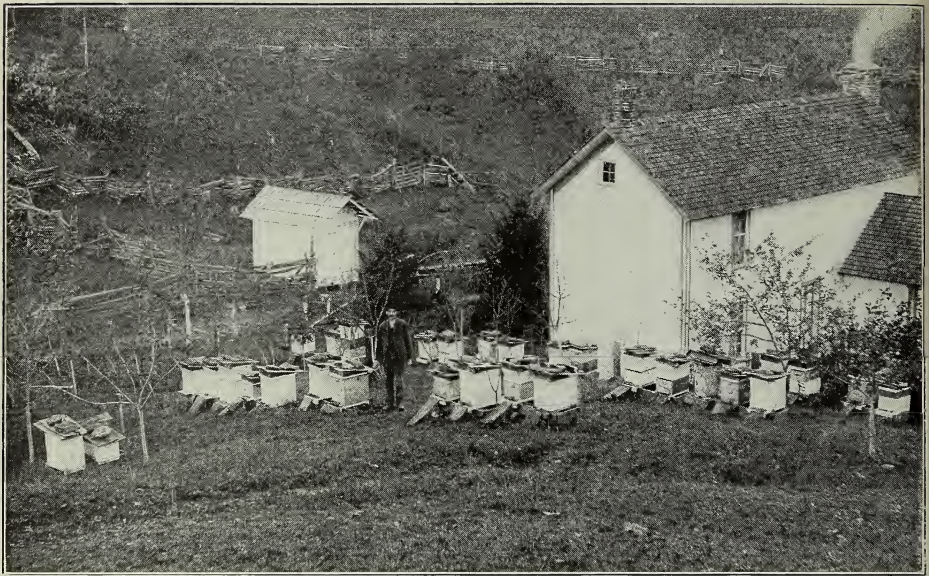
DAMPENING SECTIONS BY MEANS OF A WET CLOTH.

BY GEO. A. O. BOYUM.

To dampen sections before folding them, take them out of the crate and lay them on a table; then take a white cloth, soak it in water, wring out some of the water, leaving it very damp, and spread it over the sections as shown in the view on next page. Leave



James McLean's apiary and hive-lifting device, Hemlock, Michigan



Apiary of D. W. Bryant, Ethelfelts, Virginia.

the sections covered in this manner until they are sufficiently dampened for folding. When they are ready, they will fold together without making any noise whatever. If they are too dry they will make a creaking noise when being folded. If the sections are very dry it may be necessary to soak the cloth twice or to apply it double. Ordinarily the time required by this method is less than one hour. The moisture as it leaves the cloth settles down into the V grooves, where it is then absorbed into the wood just where it is wanted.

Rushford, Minn., June 19.

BEES IN VIRGINIA.

BY D. W. BRYANT.

I have never seen any thing in GLEANINGS from Virginia. This engraving shows how I arrange my hives with shade-boards

over them. I have kept bees in this place 20 years, and have had Italians of the red-clover strain six years. I find them superior to any others which I have kept.

This picture was taken looking west. My apiary is located on a west slope. I put windbreaks on the north side in winter.

Ethelfelts, Va., Nov. 12.

WHOLESALE REQUEENING.

A Breezy Comment on Current Discussion.

BY H. HARLEY SELWYN.

Isn't Mr. Byer's story, p. 619, Oct. 15, of his wholesale requeening, well told? I can almost see the picture of them in that tent, down on their knees peering into the corners of the hive, eagerly looking for "her," and can almost hear the ever irresistible "There she is!" as one catches sight of the quivering,

elongated body of the mother of the hive, always running, squirming, slipping through the denser clusters, or lying motionless in some shaded portion of the hive.

Indeed, it is a fascinating work, and one that causes the dinner or perhaps the breakfast hour to slip by unnoticed



Dampening sections by laying a wet cloth over them for an hour,

until a frantic mother or wife gets up sufficient courage to approach near enough to make her voice heard; for, persuade as you will, she never will believe that the combination of hum and veil can make other noises pass unnoticed.

DOUBLE SUPER WITH EXCLUDER BETWEEN FOR FINDING QUEENS.

But, to touch on the point Mr. Byer has so ably handled, viz., the best process of locating the queen of a populous black colony in order to remove her and replace with one of the Italian strain, it has been the writer's privilege to undertake a like hunt through many hives of blacks; and he, too, has found the plan outlined by Mr. Byer of the greatest assistance. Possibly the following suggestion is even more simple, if any thing, and gives good results: Take two ordinary deep supers; and, after placing a queen-excluder between, fasten well together with shipping-staples. Place this before the hive to be operated on, then remove one frame at a time, and, after a quick glance over each to sight the queen if possible before the bees become badly excited, shake into the empty super. Repeat this performance with each frame, placing them either in an additional super designed for that purpose, or leaning them against the hive. Now ply the smoker on the mass of bees lying on the excluder, and see them vanish through the perforations until none but frantic drones remain; and, unless fortune is against you, there you will find the queen trying with all her might to reach the heart of the underhanging cluster. A moment's glance will decide the question; and if no queen shows up, transfer your attention to the interior of the empty hive, and the chances are you will find her somewhere on the walls or in the corner of the hive. The easiest part of all then (that of pinching her) can be done, although it always seems hard to close down on such very willing servants—at least it has always caused me a feeling of remorse to end so quickly this wonderful organ of reproduction, adored and treasured by her host of followers. Such, however, is the claim of modern bee-keeping; and if we want to hold in check that terrible scourge, foul brood, running rampant through this country, Italian queens, and Italians, too, of only the most vigorous strain, must take the place of the humbler black.

MOVING BEES FIFTEEN MILES ON A FLAT CAR.

This fall I took in charge a yard of about 35 colonies of blacks and transferred them on a flat car a distance of 15 miles from a territory where foul brood is not yet known. It was my first experience in moving bees by rail, and certainly it has shown me that with little difficulty a hundred hives or so could be quickly and safely moved to new pastures for the honey-flow. The hives in question were closed over on top with wire cloth, across the front with a strip of lath. They traveled without a hitch—that is, so far as the bees themselves were concerned;

but the railway agent couldn't get up nerve to weigh each individual hive, so made an estimate, much to the benefit of his nerves, perhaps, but hard on the earnings of said railway; for his tense condition on approaching and handling one to get an idea of its approximate weight was so great that the hive must have felt extremely light, for he figured on only 25 pounds. When in great stress of mind or body it is claimed mankind possess abnormal strength. I rather think he was no exception to the rule. Nor was he the only backward man around that station; for when the freight pulled in, the train hands were quite willing to wait several hours if I would only do the loading; and, in fact, I had to.

These colonies, as I have already mentioned, are the real "black as your hat" quality, and next spring it behoves me to do some queen-hunting extraordinary.

Kirks Ferry, Que., Can.

THE COLORS OF NORTH-AMERICAN FLOWERS.

BY JOHN H. LOVELL.

Beautiful flowers are designed to attract the attention of insects, and they exist only where there are insects to behold them. "In New Zealand," according to Wallace, "where insects are so strikingly deficient in variety, the flora is almost as strikingly deficient in gayly colored blossoms. Of course, there are some exceptions; but, as a whole, green inconspicuous and imperfect flowers prevail to an extent not to be equalled in any other part of the globe, affording a marvelous contrast to the general brilliancy of Australian flowers combined with the variety and abundance of insect life." Very few of the higher insects feeding on nectar and pollen occur in New Zealand. A few years ago only 18 species of butterflies were known, and of bees only 10 species, while at the time of their discovery neither the honey-bee nor bumble-bees were found in these great islands. Flies are here the most important group of flower-visitors.

All orders of insects are much more abundant in both Europe and North America; and in lands where there is an insect fauna, rich both in species and individuals, flowers display an infinite number of brilliant hues and delicate shades which surpass the power of the artist and naturalist to describe. There is a wonderful variety of bicolored, tricolored, and variegated blossoms, often veined and mottled in endless ways. Not only are the prismatic colors—red, orange, yellow, green, blue, and violet displayed by many species with a profusion of intermediate shades, but rarer colors like black, brown, scarlet, crimson, and lurid purple are not unrepresented. Nature has tried her skill as a colorist in the bright translucent hues of minerals; in the vivid, living tints of corals and sea anemones; in the lights and shades reflected by the scales of the butterflies' wings; and in the brilliant iridescent

hues of the plumage of birds; but nowhere are her inexhaustible resources in chromatics so bountifully exhibited as in the colors of flowers.

See, and scorn all duller
Taste, how heav'n lower color,
How great Nature dearly joys in red and green;
What sweet thoughts she thinks
Of violets and pinks,
And a thousand flashing hues made solely to be
seen;
See her whitest lilies
Chill the silver showers,
And what red mouth has her rose,
The woman of the flowers!

A flora in which the flowers are all of one color would be at a great disadvantage. The value of color contrasts is evident, for they enable the visitors, more especially the bees, easily to remain constant to a single plant species in collecting pollen and nectar. If they were to visit flowers indiscriminately, much pollen would be wasted and much time and effort lost in locating the nectar. In the Alpine flora of the Tyrol, in the heights above the tree-line, there is no spring and no autumn—only a short summer following a long winter. All the flowers have, therefore, to blossom in this short time. "White and red, yellow and blue, brown and green," says Kerner, "stand in varied combination on a hand's-breadth of space. Hardly has the snow melted, than there appear almost simultaneously the violet bells of the soldanellas and the golden flowers of the cinquefoil, the white crowfoot and androsace, the red silenes and primulas, the blue gentians and the yellow auriculas, the heaven-blue forget-me-not and the yellow violet as well as the saxifrages in every conceivable color." Such a meadow in Alaska, where the summers are equally short, is thus described by Burroughs:

Starred with flowers of every hue,
Gold and purple, white and blue;
Painted cup, anemone,
Jacob's-ladder, fleur-de-lis,
Orchid, harebell, shooting-star,
Crane's-bill, lupine, seen afar;
Primrose, poppy, saxifrage,
Pictured type on Nature's page.

According to a well-known principle of physics, each color appears more brilliant in contrast with other hues than it would if viewed alone. This can be easily shown by a simple experiment, which any one can perform. Cut out two pieces of red paper, each two inches square. Place one of the red squares on a large sheet of green paper and the other red square on a large sheet of red paper. The red square on the green paper will appear so much more brilliant than the red square on the red paper that the observer will have difficulty in believing that they are identical in hue.

Some years ago I began an inquiry as to how many flowers there are of each color in the flora of North America. In northeastern America north of Tennessee and east of the Rocky Mountains there have been described 4020 species of flowering plants, or angiosperms. Partly by direct examination and partly by reference to various systematic works I have tabulated the entire number

according to their predominant colors—a labor which, I need hardly say, extended over several years. I find that in this area there are 1244 green, 956 white, 801 yellow, 260 red, 434 purple, and 325 blue flowers. In every hundred species there are 30.9 green, 23.8 white, 19.9 yellow, 6.4 red, 10.9 purple, and 8 blue.

The green, white, and yellow flowers number 3001, or three-fourths of the entire number; while the red, purple, and blue amount to only 1019. Though there are many exceptions, the first group usually have regular or wheel-shaped or cup-shaped flowers with the nectar easily accessible, and are visited by all flower-loving insects—a miscellaneous company of beetles, flies, butterflies, wasps, and bees. The flowers belonging to the second group are very frequently irregular or one-sided, with the nectar deeply concealed, and are attractive chiefly to long-tongued bees, butterflies, and hoverflies (*Syrphidae*). The tendency of flowers to change from green, white, and yellow to red, purple, and blue, is much stronger than the reverse; but red, purple, and blue flowers usually have the petals white or yellowish at the base and in the bud, and not infrequently the whole corolla reverts to one of these colors.

Have these relations any significance? Undoubtedly they have. They are signals pointing out to us the course our flora has pursued in its evolution. The green, white, and yellow colors are older and more primitive than the red, purple, and blue, and were more common in the primordial flora. The red, purple, and blue flowers are, as a whole, of much more recent origin, and have been developed from green, white, and yellow blossoms. For example, the buttercups are a much older genus than the columbines and larkspurs, and the cinquefoils are more ancient than the pea, bean, or vetch; while, again, the viburnums are older than the honeysuckles. The orchids have certainly developed more recently than the lilies. Occasionally irregular flowers revert to their ancestral stages and produce perfectly regular forms. Individual white flowers may change to red, as in the Sweet William; or to yellow, as in the climbing honeysuckle; or yellow flowers may change to red as in the bush honeysuckle and the lantana.

Let us next inquire how many of these 4020 flowers found in northeastern America are pollinated by the wind and how many by insects. Among wind-pollinated plants are the grasses, sedges, and rushes; many homely weeds like the pigweeds, sorrels, nettles, and ragweeds, as well as many deciduous bushes and trees, as the alders, poplars, elms, oaks, beeches, and birches. After a careful examination of every genus I place the number of wind-pollinated plants (including a few pollinated by water) at about 1046. This number is probably a little too large, for in the case of some western species there are no recorded observations, and they may be self-pollinated. Still it can not be

far from correct, since the grasses and sedges alone in this area include 705 species.

Most wind-pollinated, or anemophilous (wind-loving) flowers are green or dull-colored; but the sorrels are blood-red, and the aments of the birches are golden yellow. Of the 1046 anemophilous species, 1021 are chiefly green, 1 white, 11 yellow, 3 red, 12 purple. Thus there remain in eastern America 2972 species which are pollinated chiefly by insects, or are self-pollinated. Of this number 223 are green, 955 white, 790 yellow, 254 red, 425 purple, and 325 blue. It is evident that bright coloration is correlated with insect-pollination, and dull coloration, or inconspicuousness, with pollination by the wind.

Brilliant flowers usually contrast with green foliage. But in early spring I have seen white and blue hepaticas blooming amid sere and brown leaves fallen from the trees the preceding autumn; and contrasting with the dark soil in dense woods I have found the snow-white Indian pipe. In the eternal twilight which prevails in the primeval forests of the equinoctial regions of both the old and the new world there occurs a group of parasitic plants called the *Balanophoraceae*. There are only about forty species; and the whole plant is colored deep yellow, blood red, or purple. Flowers which rest upon the surface of the water are often white or yellow, as the yellow and white water-lilies. Nocturnal flowers are also generally white or yellow, since purple or blue would be invisible at night.

In the absence of petals the calyx may become bright-colored, as in the clematis, anemone, marsh marigold, and buckwheat; or both calyx and corolla may be colored, as in the columbines, larkspur, and fuchsia. The aments of the willows are rendered very conspicuous in spring by the very numerous yellow and red anthers, while in the meadow-rue the white and blue filaments are broad and petaloid. The small leaves or bracts surrounding the flowers are also frequently highly colored. In the painted cup (*Castilleja*) the bracts are bright scarlet; in *Monarda media* the bracts are purple, and in the bunchberry white, while in the *Protea* of Australia the upper foliage leaves are blue.

Again, conspicuousness may be secured by massing small flowers in large clusters, or by their production in great profusion. A single bluet is visible at a distance of only a few feet; but when they whiten a whole hillside they form a part of the facies of the landscape. In the town of Wiscasset, Maine, the dandelions when in bloom carpet the whole fields; while in New Jersey large districts are white with daisy blossoms, but, unfortunately, not for the harvest. On the prairies of Nebraska the ground-plum presents in spring a very striking appearance, the plants forming dense masses of reddish-blue flowers. In North Carolina, *Rhododendrum maximum* and *Kalmia latifolia*, or mountain laurel, the two handsomest North-American shrubs, "are seen to cover

tracts of great extent at one season, presenting an unbroken landscape of gorgeous flowers." They adorn the valleys all around, says Asa Gray, in one of his letters, "in immense abundance and profuse blossoming of every hue from deep rose to white." Almost equally conspicuous in various parts of the country are large areas brightly colored with yellow buttercups, goldenrods, sunflowers, orange-hawkweeds, purple thistles, and blue lupines. The blue lupine, or "blue bonnet," is the State flower of Texas, where, says Scholl, "it grows in great profusion over the entire ground, making it look like a solid blue carpet for miles around." But nothing in this world can surpass in beauty or lavish abundance the cloud-like masses of bloom displayed by the great northern apple-orchards.

Compare these brilliant landscapes of color with Wallace's description of the tropics: "I have never seen in the tropics such brilliant masses of color as even England can show in her furze-clad commons, her heathery mountain-sides, her glades of wild hyacinths, her fields of poppies, her meadows of buttercups and orchises—carpets of yellow, purple, azure-blue, and fiery crimson, which the tropics rarely can exhibit. We have smaller masses of color in our hawthorn and crab-trees, our holly and mountain ash, our broom, foxgloves, primroses, and purple vetches, which clothe with gay colors the whole length and breadth of our land. These beauties are all common. They are characteristic of the country and climate; they have not to be sought for, but they gladden the eye at every step. In the regions of the equator, on the other hand, whether it be forest or savanna, a somber green clothes universal nature. You may journey for hours and even for days, and meet with nothing to break the monotony. Flowers are everywhere rare, and any thing at all striking is to be met at only very rare intervals."

Waldoboro, Maine.

FOUL-BROOD LEGISLATION IN CALIFORNIA.

The Necessity of Co-operation between the Northern and Southern Portions of the State.

BY HARRY K. HILL.

On p. 552, Sept. 15, Mr. P. C. Chadwick makes some suggestions about a new foul-brood law for California with the intention of bringing out a discussion. I fully agree with him that the present law is of little force, and that a new law creating a State inspector is desirable. He makes some suggestions about the details of the proposed new law, which, in the main, I agree with; but there are some points upon which I should like to make some remarks; and chief among them is this: He says, "My idea would be to . . . have a State inspec-

tor appointed by the Governor upon the recommendation of the State association." Now, upon this point hangs considerable. The reader may not know that there is a little friction between the bee-keepers of the northern and southern parts of the State, caused, undoubtedly, by more or less misunderstanding. The so-called State association represents the bee-keepers in the southern end of the State, with headquarters at Los Angeles. I am not well posted on their membership, but I think I am well within bounds when I say that they have not a member north of San Francisco, and very few that far north. On the other hand, the northern part of the State is represented by the Northern California Bee-keepers' Association, with headquarters at Elk Grove, near Sacramento. The memberships of the two associations, I understand, are nearly equal; but the northern association has much greater future possibilities. The position taken by the so-called State association in all matters of legislation (and otherwise for that matter) has been particularly galling to the bee-keepers in the northern end of the State. For instance, at the last session of the legislature a bill was presented which would have undoubtedly been passed had it not been for the opposition of our association. On three occasions, I believe, our secretary requested a copy of this bill before it was presented, but never received one. Instead he received a letter advising our association to push the bill, without seeing it, stating that it was to our advantage to do so. Practically the only difference between the bill and the present law was that which would have effectually erased the Northern California association from any further importance in California beedom, making it necessary, if we would have any thing to do with contemporary bee-keeping life, to join them.

I could go on, but have probably said enough to show that conditions are not as they should be. It would be greatly to our credit and mutual benefit to work together. We of this part of the State are not opposed to joining a State association, but it must be a State association. Meetings must be held in various parts of the State, not at one particular point; and several other things should be modified which I will not touch on here, although they could doubtless be settled favorably to both sides.

The point I wish to bring out in writing this is that, in a campaign for another foul-brood law, the first points to reckon with are the bee-keepers themselves. The Northern California bee-keepers will undoubtedly object to any law which places the full control in the hands of the State association. It seems to me that the bee-keepers of California can consider nothing more important at their next annual convention than steps to bring about a better understanding between the different parts of the State, as that is certainly of the utmost importance in forcing any legislation.

Willows, Cal., Nov. 30.

BEE NOTES FROM EUROPE.

Buckwheat and Bees.

BY R. LINDE.

On this continent, buckwheat-growing is fast decreasing in spite of its being an excellent feed for pigs. Farmers in heather regions, where sandy soils predominate, say that buckwheat, where fed to pigs, imparts a peculiar sweetness to the bacon; and its hay, though small in quantity, is greatly appreciated. Buckwheat is considered an unreliable crop, although some years it pays well. Being very sensitive, late frosts very often ruin the harvest. This year I have met farmers who had sown buckwheat successively three times, and each time light night frosts killed the young plants.

Generally, buckwheat is sown late in May. The first of July is the date when the white-flowered fields put in an appearance.

As unreliable as buckwheat is to the farmer, so it is to the bee-keeper as a honey-yielder. But when all conditions are favorable, buckwheat yields honey profusely. However, a special market must be sought for buckwheat honey on account of its color and peculiar flavor, which the ordinary honey-consumer does not like.

The old-fashioned skeppist maintains that buckwheat yields nectar during the morning hours only, and that east winds favor the secretion of nectar considerably. Indeed, I have rarely seen bees working in the buckwheat-fields in the afternoon except when the weather in the morning had kept the bees indoors. Whether in that case they gathered much nectar I do not know.

DO BEES STORE MORE WHEN WORKING ON BUCKWHEAT!

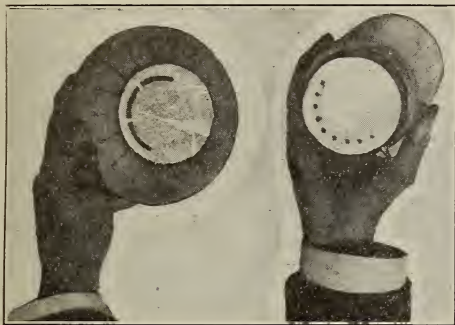
In the opinion of the skeppist, bees sting more furiously when working in buckwheat fields than at other times. He further maintains that work in buckwheat fields exhausts stocks rapidly—so much so that they are almost worthless for any later flow. According to him it is, of course, the buckwheat that in one way or other causes the bees to die in such immense numbers. The peasant is always inclined to look for external causes, never suspecting his bees to be at fault. But the real cause of the dwindling of stocks working in buckwheat is very probably different. The skeppist is working with a bee in which the swarming trait is systematically developed. Now, buckwheat comes in bloom just at a time when the old foraging bees that went with the swarms (three and more from one stock) have done their work, and there is not an adequate number of young bees ready to take their place, owing to the fact that brood-rearing stopped for several weeks while swarming was going on.

My own experience in buckwheat-fields does not warrant me to express any opinion as to the assertion that stocks having work-

ed on buckwheat are less valuable for any later flow; but this assertion does not seem to be entirely without some foundation. Some bee-keepers think that it is the strong flavor of the buckwheat honey that makes the bees dull, and renders them more or less indifferent to later-blooming flowers with less pronounced odor.

THE ONE-HOLE FEEDER.

The one-hole-feeder idea, as expounded by the editor, is best taught in England, and for a long time already. In England I became acquainted with a feeder I am now using exclusively. I don't know who the



A feeding-jar having an adjustable opening for the syrup.

inventor is; but it is a splendid feeder, by means of which feeding may be easily adapted to all possible requirements. The illustration explains the construction. One could turn on from one to nine holes; and when the bottle is empty it may be refilled without the bees escaping.

BEE-STINGS AND DARK CLOTHES.

Although I always wear dark clothes when working in the apiary, I experience no inconvenience from them as regards stings, because they are so strongly saturated with the hive odor and with bee products that the color becomes a secondary factor. My black felt hat, however, has many a time served the useful purpose of attracting pugnacious bees away from my unprotected face when an unexpected onslaught happened to render the situation unpleasant for me.

DARK HONEY FOR ANÆMIC PEOPLE.

Mr. Editor, you are quite right in your explanatory note to what Dr. Miller gleaned from *Deutsche Bienenzucht*. Basswood honey is not dark, page 614. The fact is, the tongue can not trace the basswood-honey admixture in the dark honey the bees gathered in considerable quantities during July; still another fact is that, in the morning and evening, bees made a great roar in the basswood-trees. About the same time, great quantities of highly aromatic propolis were accumulating in the hives. This propolis remained rather fluid for a considerable time.

It seems odd, but it is a fact, that I sold my dark honey sooner than the light, owing to what I stated in my advertisement in the local paper, viz., that the dark honey, on account of its higher percentage of phosphorus and iron, could be especially recommended for nervous and anæmic persons, scrofulous children, and for all those who have to do much brain work. After this advertisement appeared, the majority of the orders coming in were for dark honey. However, there is one very important difference between my dark-honey customers and my light-honey customers. Rather few repeat orders are coming in from the former in comparison with those from the latter.

HIGH PRICE OF SUGAR.

The editorial, page 611, Oct. 15, regarding expensive sugar for fall feeding, reminds me that, at the time of writing, the price of sugar has not fallen much in spite of the fact that the beet harvest has been very much better than was expected some months ago. Indeed, the beets contain a much higher percentage of sugar than in former years. It is the yield in weight that is unsatisfactory. Bee-keepers in most European countries feel very keenly the indirect tax levied on sugar. In Germany the sugar tax amounts to about \$1.70 per 100 lbs.; in Holland, Austria-Hungary, Italy, etc., this tax is higher still. We are making efforts to get the sugar we need for feeding our bees free of tax. But difficulties arise from the necessity of having such sugar characterized by some admixture that does not harm the bees, but at the same time prevents an illegitimate use of the sugar. Sand, sawdust, peat fiber, etc., have been suggested and tried in some states; also pepper (from capsicum) in conjunction with a coloring matter. These latter means for characterizing sugar have been tried in Holland. The pepper is said not to have any deleterious effect on the bees.

I think \$8.00 for sugar, page 616, Oct. 15, is a rather stiff price. The highest price I have had to pay this autumn was \$7.50, the tax included.

Wendhausen, Wildesheim, Germany.

[We believe it is true that bees sting more when working on buckwheat than when working on a source that is a slower and an all-day yielder like clover. When honey comes in with a rush, as it does from buckwheat, then slacks up and stops, bees become cross. When they are robbing in a wholesale way they become furious when the bee-keeper cuts off suddenly the supply. It has the same effect when nature stops the flow of nectar.

We knew that slow feeding had been exploited more in Europe than in this country. The scheme you show in the feeder is a good one and worthy of adoption in this country. We are convinced that slow feeding has come to stay here. For queen-rearing and brood stimulation it is invaluable. —ED.]

Heads of Grain from Different Fields

Increase—How to Make it.

1. Which method is preferable in making rapid increase—the Biggle way of allowing the nuclei to build their queen-cells after division, or the Somerford way of caging the queen and dividing after the colony as a whole has built and sealed sufficient cells? If the latter, what should be done with the queen in the mean time? and would it not be practicable to remove a couple of frames of capped brood and form one nucleus with her at once, and let the cells be built on the remaining frames? This would not deprive one of the services of the queen at all. Further, assuming that in neither case would there be any surplus stores, would there be enough difference in the condition of the nuclei at the end of the season to warrant one purchasing queens for each one when dividing?

2. I have three colonies—one Italian and two hybrid—and wish to increase to six the coming summer. I also want some honey. Now, if I divide my Italian colony (now in an eight-frame hive), and prevent swarming in the two other ones, it will make it; or if I increase by the method outlined by G. C. Chase, p. 655, Nov. 1, which is practically the Alexander way, I shall then have six. Which way, under ordinary circumstances, will be more profitable, taking into account the honey crop and outlook for the following year? Of course, in the former case I would have four Italian queens; in the latter, four hybrids; but as there are far more hybrids and blacks in this locality than Italians it is doubtful if all would be mated purely.

3. Another question: Suppose the Somerford plan is employed, and more than one cell is built on a single frame, and it is desirable to save the surplus queens to queen black or hybrid colonies. I understand that West protectors can be used; but I have never seen the *modus operandi* described from the placing of the protector to the queen at work in the colony requeneed, nor even the time limit in removing the virgin from the protector.

4. I have read that combs of honey partly sealed would be taken down into the brood-chamber in the fall. I took the surplus from one colony about Sept. 25; but as there were two or three combs that were not entirely sealed I placed these in a full-depth super along with frames that I had cut the honey from, all but a starter, and put them on a colony to be cleaned up. One week later the hive was opened, and I found that most of the starters had been drawn out and were being filled, and the queen had left empty combs in the brood-chamber and laid about ten or twelve thousand eggs in the super, and went downstairs again. After the brood had all hatched I took the super off about Oct. 25, and there was not half a pound of honey in the brood-nest. I could not use the combs from the super, as they had been spread apart to get fat combs; and no more than six would go into it, so I fed them for winter. Why did the colony act that way? I took this super, cut out all the capped honey, and put the super on my Italian colony, and they will not move a drop of it. They all seem to be loafing around on the combs, and eating when they get hungry. As I left but five combs in it would they not be apt to choose it for a winter nest? What is the answer—Dr. Miller's "kick the hive and run" idea? I have tried this, but the bees seem to chew the comb badly.

5. In July, 1910, I had a black queen mate with a yellow drone, her progeny being 90 per cent banded—from one to three light-yellow bands. This year there has been a constantly increasing reversion toward the blacks, until at present there are not 40 per cent showing any bands whatever. Why?

6. You said editorially, about a month ago, that you had never seen any particular feeling shown against newly hatched bees. A few weeks ago I saw a very young bee yanked out of the hive and thrown out in the grass. I picked it up at once but could not find any thing wrong with it. It seemed sound in wind and limb, so I opened the hive and tossed the bee down on the frames, where it was instantly grabbed by as many as could reach it, and hustled down and out again. Why?

7. There was a question raised in GLEANINGS as to whether the bee-moth ever lays eggs outside of a hive. It does. I melted up some old comb—stewed it, in fact, for half an hour; then made it into cakes about four inches in diameter, and put a handful of them in a closet in my shop. About ten days af-

ter that, I happened to shift them and found wax-worms, about $\frac{3}{4}$ inch long, very busy making subways in it. As all eggs that might have been in it when the wax was rendered must have been hard-boiled, the wax must have been visited by the moth afterward.

Newfield, N. J., Nov. 9. G. E. NIGHTINGALE.

[1. We would recommend the Somerford plan. The queen that is caged is caged inside the hive, and you will find that the bees will build cells after she is confined, about the same as if she were out of the hive entirely.]

2. We would advise you to make the division entirely with the Italian, and run the two hybrid colonies for honey—not because the hybrid colonies are any better for the production of honey, but because it is more desirable to have your increase of the pure stock of Italians. If you use drone-traps on the entrances of the hybrid colonies, and allow the drones of your Italian colony to have free flight, the chances are that the queens will be purely fertilized.]

3. The surplus of cells can be put in a West queen-cell protector with a West queen-cage over the protector, so that, when the young queen hatches out, she will be caged therein. As it is usually very difficult to introduce virgin queens that are three, four, five, and six days old, we advise you to introduce as soon as she hatches, or as soon thereafter as possible.]

4. When there is a little honey in the upper story of a colony, the bees sometimes take it down and sometimes they will not. A good deal will depend upon conditions. As a general thing, it will take a colony a good while to take the honey down from the upper story into the lower one, and, as a rule, they will not do it. A better way would be to extract these combs if you have an extractor; then put the combs in the hive and let the bees clean them up; then put them back in the honey-house for use next season. If you have no extractor, store the combs containing a little honey, and use them next spring in the brood-nest for spring feeding.]

5. Referring to the black queen that mated with a yellow drone, it is hardly probable that her original stock would change after she once met the drone. It would be our guess that the original black queen had been superseded, and that her daughter had taken her place. This thing will happen very often, and a beginner would not notice the change had taken place, especially if the young queen looked very much like her mother, as she often does.]

6. There must have been something that the bees discovered that was wrong with that young bee, and yet you failed to see it. From your statement we should conclude that the bee hatched prematurely. Such bees are never tolerated, for the reason they will never be of any use.]

7. There has been a great amount of proof introduced of late, showing the bee-moth and the wax-worm will work in old combs or even in cakes of wax outside of the hive. Our old friend Dr. C. C. Miller was certainly wrong on this proposition. The best of us make mistakes.—ED.]

Bees Wintering Without Protection of Any Kind.

One of my neighbors has a colony of bees in a hive that stands on the top of a hill, and is not protected in any way. The brood-chamber is single-walled, and the owner never looks into it, although he gets considerable honey from the super every year.

My brother has a hive of bees that stands on a table, the top of which is not level by any means, for it looks as though it might almost fall over. The hive is single-walled, and the flat cover is badly warped, so there is nothing to keep the cold wind from blowing right in on the bees; but, at the same time, they wintered well last year.

I am wintering some of my colonies by piling cornstalks over the hives on the back and both sides. I put deep supers on the brood-chamber, with a few thicknesses of muslin underneath, confining the bees to the lower story. The corn fodder piled around serves as a protection.

Westfield, Ind.

A. L. BEALS.

[The two cases first mentioned are the exceptions that prove the rule. You are very wise in protecting your bees.—ED.]

In Hunting Queens, Look for the Bee with Short Wings.

I suppose every person has some contrast to look for in searching for a queen; and the more striking the contrast the sooner she is found. I don't know that I have seen in print the contrast that I always look for, and it strikes me the most forcibly in looking for a queen. It is this: Her wings look *very* short. We are looking at their backs, and the wings are the most prominent visible part. When I see the short-winged one I know it is the queen. Of course her wings are not short, but they look so on account of her comparatively long body.

Galena, Kan., Nov. 25.

J. P. BRUMFIELD.

[You have mentioned one of the important distinguishing characteristics that help much in finding a queen. Another characteristic that is often seen on an Italian queen is the color of her abdomen and hind legs. They are yellower than those of a worker. But the greatest help is the behavior of the bees toward her. This last is of great assistance in locating virgins, small and dark.—Ed.]

The Success and Enthusiasm of a Lady who, from a Start of a Nucleus, Increased to 53 Colonies.

You wish to know if I have found your journal interesting and helpful. I have found it very helpful, and much more interesting than I expected. When I bought my first bees I subscribed for your journal as an aid to the bee-work, but did not expect to be very much interested. I have found that bee literature can be very interesting as well as instructive.

You have touched on all the subjects that I desired most to know about, and I have never had to write for information. I started with a nucleus, and now have 53 colonies. I have lost only two in the cellar, and those were short of stores; neither have I lost more than two from spring dwindling. I knew nothing about bees when I began, except what I had learned in the A B C book.

I got all of my information from GLEANINGS, except what I have gained by experience. My bees have always paid their own expenses and something besides. I have all the honey I want to eat, and I count that considerable, for I am fond of it. I have enjoyed A. I. Root's articles on chicken-raising very much.

West Chazy, N. Y., Aug. 15.

EVA A. BROWN.

Brood-rearing in Mid-winter.

I should like to know if bees will hatch in the latter part of December in Chicago. I have 100 colonies. While the weather was warm my bees started to carry in water. I opened the hive and found one comb partly filled with eggs. Do bees need water on account of the brood?

Chicago, Ill., Dec. 15.

R. J. K.

[It is not unusual to find brood in the central combs of a hive in December, especially when there has been as much warm weather as there has been this winter. Whenever there is brood-rearing going on, the bees need water; and that is why, on warm days through the winter, they make such efforts to find it. Very often brood started in winter is lost; for when cold snaps come, the cluster draws together, with the result that the brood, especially that on the outside, if the queen has started quite a little, is abandoned.—Ed.]

Stings Relieve Rheumatism at 80 Years of Age.

Although never very much afflicted with rheumatism I have, for some years, been troubled at night with pain in one arm, and during the last year it affected both arms, but generally only at night. I have some bees which have stung me occasionally; and as my pain has varied I have often thought that the stings which I got might have accounted for it.

Several months ago I had a strong dose of bee-sting cure. For some reason the bees took the notion of giving me a chastening for intruding on their rights, and it seemed as if a regiment had been sent to give a sharp notice, which they did without stint. I think over a dozen discharged their errand faithfully by giving me notice with their probangs; but for about two months I have had no rheumatic pain. I have had no pain at night as before. It has entirely left me.

Detroit, Kan., Nov. 29.

A. M. ENGLE.

Peanut Candy for Bees.

I bought two barrels of peanut candy. The nuts are weevil-eaten a little. I intend to boil and strain this and feed it to the bees this spring. Would it be safe to do it?

Salina, Kan., Nov. 22.

PHARO MILLER.

[In regard to the peanut candy that you have, we should be afraid that it is scorched and darkened in color to give the different flavors. If so, it would be a little risky to feed it to the bees, although if used directly for brood-rearing you might have no bad results. We usually think that the best grade of granulated sugar is the cheapest in the end. If you fed any amount of it in the spring, there would be some danger that some of it would be left over and stored in the sections, which would give the honey a bad taste and practically spoil it for market.—Ed.]

Too Much Pollen in the Hives.

Is there any thing to be done where the bees crowd every thing out of the lower story with pollen? I have just gone through my apiary, and find the hives good, bad, and indifferent in this respect. Some few colonies had only a small amount, having also plenty of brood and honey. Other hives had the lower-story frames almost entirely filled with pollen. These two last classes I have taken account of to see how they come out.

Ceiba Mocha, Cuba, Nov. 5.

R. H. BIGELOW.

[When a hive has an excess of pollen, the only thing to do is to remove the combs containing it and set them one side to be used the following spring. Such combs are often a valuable asset to the bee-keeper. During the winter we would not leave very much pollen in the hive. Give combs of sealed stores, the best you have, then let the bees work out a winter nest, which they will do if you give the stores to them early enough in the season.—Ed.]

Importance of Upward Ventilation for Colonies Wintered on Summer Stands.

The article on p. 664, Nov. 1, "Wintering Bees on Summer Stands," is truly "good stuff." One winter in Kansas I wintered fifty colonies with the loss of only one. This was one of my very best colonies; but it was in a new tight hive, with the oil-cloth very carelessly left on under the blanket of chaff packing, so that the bees had absolutely no upward ventilation. I learned the necessity of top ventilation away back in the '40's in glorious New England, when we used the old-fashioned gum or box hive.

THE FIRST SWARM NOT ALWAYS A PRIME SWARM.

I have often known of a first swarm to be led by a virgin queen, and, therefore, to be what is known as an after-swarm.

Carlton, Col.

JAS. H. WING.

Corrugated Paper in the Top and Bottom of the Shipping-case.

That little discussion on p. 712 has stirred me up somewhat. It is one of the rare occasions wherein I differ with Dr. Miller. I should be glad to have a sheet of corrugated paper on both top and bottom of my cases, for the reasons that the editor has named; also because grocers often open the cases on the bottom, making the no-drip arrangement useless. It looks as if the sign "This side up" ought to remedy the matter, but it doesn't. If you will visit the freight depot in your town and take a look at the boxes so marked, you will find that the freight-handlers pay little attention to it.

Newman, Ill., Dec. 4.

C. F. BENDER.

A Good Record for a Beginner.

Last June I got some chufas and planted them about the 10th of July. I harvested them this evening, Nov. 17, and from one hill I got 264 nuts. How is that? I like them well when roasted. California seems to be well suited to them.

How is the following for increase? One colony to start with this year, six combs; increased to four colonies. All combs were built from full sheets of foundation. I have nine extra combs on hand, and took 40 lbs. of extracted honey. I sold one colony for \$6.00.

Sacramento, Cal.

A. D. MUNGER.

Our Homes

A. I. ROOT

NOTES FROM OUR FLORIDA HOME.

It is now Dec. 23; and although we have been here since Nov. 9 I have been so busy (and happy in my many busy tasks) that I have not until this very moment felt like taking time to say a word to the many good friends who are following me—that is, I have not found time to speak especially of this Florida home. Speaking about homes, there are more homes being started just now right here in Bradentown (that is, new houses building) than in any other place I ever visited that I can remember. Most of these homes are started by elderly people; and it is really inspiring, to me at least, to see old men flying around with the alacrity and enthusiasm of boys, helping the surveyor, making the cement blocks that all structures nowadays stand on, and a little later, helping the carpenter and doing a hundred things they perhaps never thought of before, because they are so anxious to get out of the little tent they have been living in thus far all winter until they could get up some kind of little house to live in. So great is the call for rooms that every house, almost, is full to overflowing, one little cottage sometimes sheltering temporarily several families. But this is no great hardship here, for out on the porch is usually a better place to sleep than anywhere indoors.

For the past two months there has hardly been a house-fly visible—at least around our home—and, so far as I am concerned, there has scarcely been a mosquito in evidence, although Mrs. Root declares she has found a few. Just at dusk I have been sometimes annoyed by the almost invisible sand-flies; but a single drop of citronella rubbed on my wrists and neck stops the annoyance at once. Crowded together as we are, there is not only great need but there is an excellent opportunity to show a Christian spirit; and I am glad to tell you we find it almost everywhere. You see most of us are comparative strangers; and it is not only a Christian duty, but good sense prompts us to be courteous and obliging to the new comers in our midst. I wonder if it isn't true that neighborhood quarrels are more common where people have lived a long while in the same place. If so, this is one good reason for going among strangers for a while.

One good brother writes me to know whether, if he has a cottage here in winter, it will be safe to leave it while he goes back north in the summer time. My answer is that our home has been thus left for many summers; and we not only leave all our furniture but eatables that will keep, and we have never lost a nickel's worth that I can discover. Our barn has never been even locked up where our gardening-tools, nails, hammers, and wrenches are kept; but when we get back every thing is just as we left it. Please consider we have colored people in great plenty all around us; but they are, as

a rule, educated and intelligent; but mark this: There isn't a saloon in Manatee Co., and *never has been*. The residents of Florida are, as a rule, all anxious to get people to come into their own neighborhood, even if they stay here only winter times, and on this account every one seems to unite in making it a safe place to leave while you are back home in the North during the summer time. There is something very enticing about the business of starting a temporary little home down in this mild and genial climate where one can work out of doors every day in winter, especially to elderly people who have, perhaps, builded several elaborate homes in the far North. It really does one good to figure out that many of the things we have been accustomed to are not really *needful*, and oftentimes we can actually be happier *without* them. Lots of people are found in barns or even sheds, and in "almost any old place;" and, judging by appearances, they seem to be quite contented and happy.

KEEPING CHICKENS IN FLORIDA; THE TRUTH ABOUT IT.

So many keep asking if they can come here in the winter and make money "keeping chickens" I have thought best to reply at some length. The greatest trouble is in getting *into* the business in the fall and then getting out of it in the spring when you go back north.

One spring, as I have told you, I turned over my flock to a neighbor at a rough guess of 50 cts. each in the spring, and was to take them back in the fall at what they were worth in the market. When I got round again he had been offered 75 cts. each; so, of course, I paid that price. He had what eggs he could get during the summer to pay for their grain; and with the 25 cts. advance in price he came out very well. As I took them back again after the moulting season was over, or mostly over, I did very well. Of course the question came up in regard to loss during the summer. I told him I would stand all the loss where it was no fault of management, and there was very little loss except a Leghorn rooster that cost me \$5.00. He was gone just before I returned, and no one could ever tell what became of him. Well, during the past summer, rump or something like it got among the chickens; and when I got around, there were only about 90 left out of about 140, big and little, turned over to him. Aside from this, everybody (that is, almost everybody) had unusual trouble about getting eggs during the past summer. Neighbors Rood and Abbott say the same thing; and another thing, this time I put in his care almost a hundred chickens of different ages, some of them only two or three weeks old. These, of course, would not be ready to lay, or at least to lay very little down here in Florida, in the six months I was away, and I tell you

it is rather expensive keeping chickens down here for six months without getting any eggs. Of course, there were some roosters to sell when big enough, and he sold about 20 and used some; but the 90 that were returned full grown cost me something like 50 cts. each for their "board and lodging" while I was north, aside from the eggs they laid. He said we would *both* be out of pocket the way it turned out, and I think he was right.

Right in sight out of the window where I am running my typewriter, just across the road from my five acres is another five acres. It was purchased just about a year ago by a gentleman from the North to go into the poultry business. He planned his buildings, including an incubator cellar, had the trees all cleared off, and bought and started his incubator just before I left in the spring. When we got back in November we found on the vacant lot, instead of the poultry-houses, etc., a big white board sign reading as follows:

For sale on easy terms, these lots,
52 by 136 feet,
Apply to _____

When I met him and inquired why the change in program, he replied something as follows:

"Mr. Root, you know as well as I do that there is no money in chickens in this locality. The feed costs ever so much more, and the prices are not as good as in the North; and any extra amount would glut the market."

I said, "How about eggs at 40 cts. a dozen?"

"Oh, yes! you can do very well with eggs; but I planned to raise broilers and roasters that sell in the North for 30 or 40 cts. a pound."

You see he failed to take into account the cost of feeding grain for months before he would be getting any returns. No wonder he decided on going into the real-estate business and selling his five acres cut up into little lots. Various reasons were given by different ones as to why hens didn't lay as usual; and Mr. Abbott declares his hens this year (at least some of them) have moulted *twice*. After I got my hens to laying I took seven dozen eggs into the store, and the clerk asked me how many hens I had. I told him about eighty. He replied:

"Mr. Root, I have a hundred hens, and I haven't had seven dozen eggs in *three months*."

My seven dozen were laid in three days. When he asked if I could tell him what the trouble was I told him I feared one trouble was he was not around with them enough to get acquainted with them. When I first got ours home we got only three or four eggs a day, and one day only two. They just stayed in the house and acted listless, and it was a full month or more before I could get them to come right up to me and be friendly.

GETTING ACQUAINTED WITH THE CHICKENS.

I told the young clerk in the store that the main reason why he had not seven dozen eggs in *three months* from his hundred hens was probably because he did not get acquainted with them. When I first got my ninety hens home I got very few eggs—one day barely two. They would run when I came near them as if they had no other idea in their heads than that I had just come out to chase one of them down for dinner; and, by the way, this is something that should never be done in a well-kept poultry-yard. Even if company does come unexpectedly, if "chicken dinners" is what you "keep hens" for, don't try for eggs at the same time. Well, I commenced at once getting into the good graces of the "biddies." Where we keep grain all the time before them in the suspended metal tubs, as I have explained, it isn't so easy to get them tame; but I tried to bring them some tidbit they liked, every little while, and I carefully avoided coming on to them with a rush so as to frighten them, always talking to them when I came near; and now when I go out mornings to let them out I say, "Hello, chucks!" before I am fairly in sight, and the Buttercup rooster always responds with a peculiar note to reassure any of the timid flighty Leghorn matrons. It took me fully six weeks to get them to running toward me when they saw me coming, and to run about and scratch and sing as a laying hen always does. Eggs are now 40 cts. a dozen; and 9 eggs, or 30 cts., pays for the grain for the whole flock, including the six Runner ducks, so you see all the eggs I get over 9 is profit; or, if it suits you better, *my* pay for the time taken in "getting acquainted."

Yesterday I got 33 hens' eggs and 4 duck eggs; and, by the way, I want to tell you I am getting four eggs from four ducks right along, although my neighbors who have the same ducks they got of me are not getting any such results at all. The old duck that laid 100 eggs a year ago without a break commenced Nov. 23, and bids fair so far (Dec. 27) to do the same thing again. Oh! I must not forget to tell you that one of my young ducks lays an egg as white as any hen's egg; and if she is fed on grain I think few of you would be able to tell them by the taste from hens' eggs. At present my six ducks spend most of their time in the drainage brook or canal, and they come so near getting their feed out of the water and along the margin that I give them only a little corn at night to make them come home, and another corn feed in the morning before they start out on their all-day raid. They are in such a hurry to be let out (so fond are they of the water) that they hardly stop for the corn in the morning. They usually have their four eggs laid by daylight, and welcome me uproariously when I come to raise the trap-door that lets them down into the creek. Once more let me say, it is *getting acquainted* with the ducks that enables me to get eggs when nobody else has any, or only very few.

Well, I have told you so many doleful stories about getting no eggs in summer and fall in Florida that I am glad to give you one on the other side. My old friend and neighbor, Mr. Raub, who did not commence with chickens until past 80, came back here in October; and during November, when nobody else was getting any eggs, he got 700 by actual count in that one month, from 50 laying hens. He and his chickens are not only good friends, but they are well "acquainted."

OUR AUTOMOBILE WHEN WE GOT BACK IN NOVEMBER.

I mentioned, as we were about going north last spring, the trouble with the coil to our machine. Well, after standing idle for six months during the summer time, it started off at almost the first turn of the crank, but, of course, it had the same trouble when starting as when we left in the spring—that is, on account of the defective coil it "limped" a little before it got warmed up. Sears, Roebuck & Co., however (according to agreement), had a new coil here almost on our arrival; and when this was put in place of the old one it worked so perfectly that it is really not only "a thing of beauty" but a wonderful convenience in taking Mrs. Root and myself wherever we want to go. During the spell of hot weather just at the close of the old year, some of our inner tubes in the tires began to play out, it is true; but they were just about a year old; and standing all summer in our hot auto house (which is but poorly ventilated) it was very likely not the best place for them. Neighbor Rood suggests that, when they are not in use, rubber tires should be kept protected from hot *air* and from *light*; and, down here in this hot climate, they should be placed in the coolest place possible. The tubes have been repaired; and as we are now having cooler weather they will likely do us considerable service yet. Even if they do fail soon, the cost of a set of inner tubes will be but a trifle compared with the comfort and convenience of having "a horse always ready to go, fast or slow," and no expense except when he is at work.

FLORIDA FRUITS IN WINTER.

When we arrived the neighbors told us our Japanese persimmons had borne a beautiful crop of fine fruit; but they got so dead ripe they were able to save only one fine specimen for us by tying it on the tree so it would not drop off. We regretted this, and have since purchased a tree that ripens a little later in the winter. After we had been here about a week, Wesley informed us there was a bunch of bananas ready to cut, and this great bunch supplied Mrs. Root and myself with the finest bananas I ever tasted, for nearly two weeks. They made a most pleasing and welcome addition to my "apple supper," and so far I have found them fully as wholesome as the apples. The variety we grow is called Hart's Choice. They are rather smaller than those usually

found in the market, but they are of a peculiar and most delicious flavor. Right close to the door of our auto-house is a large-leaved guava-bush. It is not as tall as I am, and yet it has given us 30 or 40 great fruits as large and as handsome as big beautiful pears, and, to my notion, no pear can equal them. Of course, most people have to get used to them; but a guava shortcake, as Mrs. Root makes them (with a duck egg), is ahead of any strawberry shortcake (for me) that can be made. The bush is really a sight with its branches bending almost to the ground, and one more turning yellow (and dropping off if they are not picked) every day. It is fun to see it putting out new blossoms, and green fruit of all sizes coming on all the while. To save inquiries I am glad to tell you that all the fruits and trees I mention here can be had of the Reasoner Bro's, whose nurseries are at Oneca, Fla., only four or five miles from our home.

THE EWING BLACKBERRY; DYNAMITE FOR SETTING TREES, ETC.

Friend Ewing sent me four blackberry-plants to be tested here in Florida; and as I am greatly interested in the plan of making a hole for trees or plants with dynamite, I procured at our hardware store a stick with caps and fuse for 25 cts.; and by cutting the stick in four pieces we made four holes, or cavities, one for each plant. The charge was put down about three feet, and it made an egg-shaped cavity as big as a bushel basket, pulverizing the soil and subsoil for a much larger distance around, and making a most ideal condition for any plant or tree to grow. It is also claimed that the gases and chemicals liberated will for a long time keep away cutworms and other worms or insects that might prey on the tender new shoots. I don't as yet know just how true this may be; but my blackberries have all started to grow beautifully. We have since planted a dozen or more trees in the same way, and so far are much pleased with the plan.

MORE ABOUT LARGE FAMILIES.

I was awfully "beat" to see that letter published in the Oct. 15th issue. In regard to the boys helping me in the mines, the laws of Pennsylvania do not allow boys in the mines under 16 years of age, and the school laws require all under 16 to attend the common schools, and I have 7 going to school. Some of them, I am glad to say, have *never missed a day*, nor been tardy once in three and four terms, and have received certificates of merit from the county superintendent of schools. I have one boy, 16 years old last June, who is quite a help in many ways. This is a poor farming locality. Some farmers offer a boy 30 cts. a day for 12 to 14 hours' work or longer. With the high cost of everything, that would hardly pay for clothes and shoe leather.

You say I suggest that a large family is a hindrance. I assure you, Mr. Root, such a thought never entered my head. At home with your family, big or little, is the best place on earth. Such are my thoughts. Children are never taken care of by others as their parents do it, and it *does* make one do some thinking at times. The happiest men and women in existence (or should be) are they who have good health. I get up at 4 o'clock, and walk a mile to the railroad; travel by rail 15 miles to the mines; enter the mine at half-past 7; leave at 4-10 P.M., travel 15 miles back, and get home at six, through all kinds of weather when able to work, as

this is all the work handy. There are 75 to 700 men who ride on this work train.

You suggest that a family might live on "boiled wheat," which would keep them healthy. Now let us get to conclusions as to what is the best diet for all. We must obtain the facts for this from the accumulated experience of men under various circumstances. Take the Chinese and Hindoo rice-eaters. They are not superior races of people, neither are the flesh-eating Esquimos nor the fish-eating people of Norway and the Pecheras of South America. Either vegetable or animal food a man can live on; but the decision of those in authority is that a mixed diet is best for the average. Take the American—he is always blamed for eating to excess. Where can you find a superior race of people with their mixed diet? Nature's first food is animal food. Milk—what is better? Look at young birds. They are fed wholly on bugs and worms until grown up. Three Springs, Pa. W. S. COHENOUR.

Why, my good friend, you are a rich man already—richer by far than many millionaires, in my estimation. I quite agree with you that the happiest people in the world are those who are obliged to get up at four o'clock, or something like it, and keep busy at something until bedtime. I am usually up at about four o'clock to let the chickens out before they begin to worry, and I keep busy at something until nine or ten o'clock at night. In regard to dieting, if I am correct, Dr. Wiley argues just about as you do; but I still think that I could get along very well and be satisfied and happy with boiled wheat, especially if I had a bowl of milk to go with it, and a little honey or some maple molasses. Notwithstanding, when I feel that I am rather running down, two or three meals with good beefsteak, or, better still, ground meat, nicely broiled, is about the best medicine in the world to get my digestion back into good trim. Perhaps, my good friend, you and I will not live long enough to see what those children you have been talking about will amount to; but with the bringing-up you are giving them, it would not be surprising if one or more should turn out to be millionaires, or something a great deal better for the good of humanity.

INDIAN RUNNER DUCKS, ETC., IN IDAHO.

Dear Mr. Root:—Yesterday, when I got GLEANINGS from the postoffice, a neighbor said to me "I see you get some circulars too." I told him it was GLEANINGS, and added that it was one of the publications that I really read, although I never owned a bee in my life. I am planning to make next spring a start, for it is an awful waste of good honey to let all these alfalfa-fields bloom without a bee-hive to the square mile.

I read GLEANINGS backward. First I read the poultry department and then your home department; then editorials and Dr. Miller. I happen to know Dr. M., whose smile "never comes off," and I like to read after him.

I read with approval what you had to say of sterilizing certain kinds of criminals. Last winter the legislature of the State of Washington passed a sterilization law, and the other day a man who attacked a girl was condemned to a term in the penitentiary and to sterilization—the first time such a penalty has ever been given a man in this country.

I note in GLEANINGS for November 15, that a correspondent gave up Indian Runners because they laid tinted eggs, and few of them. He says his ducks were fawn and white. Fawn and white Runners nearly always lay more or less tinted eggs; but the penciled variety invariably produces white eggs, and also lay better than the fawn and white; because to get fawn and white, very close and indiscriminate inbreeding has been resorted to. As

to white Indian Runners I have lately learned something of them. I was at Stockton, Cal., a few days ago, judging the poultry show there, and met a lady who told me that she had penciled Indian Runners, and concluded to get some white ones. She paid a high price for some white ducks from a well-advertised strain; but they proved to be such poor layers that she sold her stock and now keeps only the penciled variety.

I am interested in finding proof that Runners need water to swim in in order that they may mate properly and produce fertile eggs. I am inclined to think you are right about it; if so, this complicates the matter for a good many.

I want to congratulate you on your courage in "saying things" about advertisers who overstate matters. Sometimes I think I say too much, and at other times I am somewhat afraid my spine is a little defective.

We are having delightful weather here—cold at night, but bright sunny days and snow-capped mountains in every direction. It is a beautiful country. Every time I go to California, Washington, or Oregon (and I am called into these States often), I come back glad to see Idaho.

Wendell, Idaho, Nov. 22.

MILLER PURVIS

SWEET CLOVER IN SOUTH DAKOTA.

The following from the St. Paul *Dispatch*, dated Pierre, S. D., Sept. 13, is another illustration of the way in which humanity, even good farmers, have been neglecting one of the most valuable legumes God ever gave to mankind, and treating it as a noxious weed.

T. J. Steele, of Sioux City, one of the owners of the Steele and Goudy ranch in western Sully County, feels confident that one of the coming forage-plants of the Northwest is sweet clover. This plant, which has been spreading over the Missouri Valley, making a heavy growth wherever it has secured a foothold, regardless of adverse weather conditions, and showing an ability to thrive on the prairie with but little rainfall, has been looked upon as a pest to be exterminated if possible. But Mr. Steele says it has been proven to him by tests that, if it is handled as is alfalfa, cutting it while tender, and before it becomes woody, it makes one of the best of stock foods; and that it can be grown successfully is made evident by its rank growth wherever it has secured a start on the prairie. It is claimed to be just as good for hogs as for cattle.

Mr. Steele is hunting for a supply of the seed to start a field of it on his Sully County ranch, and to give it tests. It is a fodder for which stock must acquire a taste; but when they once take to it they eat it readily, and the results have been shown to him by men who have tried it.

BOOMING SWEET CLOVER.

There seems to be a boom on in sweet clover. We were among the earliest of farm papers to call attention to the value of this long-despised cousin of alfalfa, and are glad to have our judgment verified. But booms are unsafe things, and a word of caution may well be dropped.

Sweet clover is a money-maker to the farmer who can grow it successfully. But because it is a way-side weed it must not be assumed that it will grow successfully of its own accord. There is a trick to sweet-clover growing which must be learned, or failure will be met with. It has about the same feeding value as alfalfa. It will grow in localities where alfalfa fails. It prepares the way for alfalfa on the same ground. It makes good hay and furnishes good pasture. It renovates the soil. But it is not as good a plant as alfalfa for the purpose for which alfalfa is grown—that is, we don't think it is.—*Farm and Fireside*.

One farmer reports success in killing quack-grass with sweet clover. In view of the fact that the sweet-clover crop, for either pasture, hay, or seed, is almost as valuable as alfalfa, and that it is a great soil-renovator, quack-grass and Canada-thistle victims may well look into the matter.—*Farm and Fireside*, Dec. 9.

Temperance

"HURRAH FOR HOBSON!"

Why can't we have him for President of the United States? I clip the following from *The Union Signal* of Dec. 7:

HON. RICHMOND P. HOBSON INTRODUCES A PROHIBITION AMENDMENT.

On Dec. 4, 1911, Congressman Hobson introduced in the House of Representatives the following joint resolution, which was referred to the Committee on Alcoholic-liquor Traffic, and ordered printed:

Joint Resolution proposing an amendment to the Constitution, prohibiting the sale, manufacture for sale, and importation for sale of beverages containing alcohol.

Whereas, exact scientific research has demonstrated that alcohol is a narcotic poison, destructive and degenerating to the human organism, and that its distribution as a beverage lays a staggering economic burden upon the shoulders of the people, lowers to an appalling degree their average standard of character, thereby undermining the public morals and the foundation of free institutions, inflicts disease and untimely death upon hundreds of thousands of citizens, and blights with degeneracy their children unborn, threatening the future integrity and the very life of the nation: Therefore be it

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled (two-thirds of each House concurring), that the following be proposed as an amendment to the Constitution, which shall be valid to all intents and purposes as part of the Constitution when ratified by the legislatures of three-fourths of the States: 1. The sale, manufacture for sale, and importation for sale of beverages containing alcohol, are for ever prohibited in the United States and in all territory under its jurisdiction.

2. Congress shall have power to enforce, by appropriate legislation, the provisions of this article.

LIQUOR TRAFFIC IN PROHIBITION STATES.

The following was clipped from the *Chicago Advance* (Congregational), and you will notice they clipped it from the *Herald and Presbyter* (Presbyterian); and if the Baptist brotherhood and the Methodist Church will now indorse it and publish it I think it may do a lot of good. It is just what I have had in mind; but it is told so much better than I could tell it I have copied it entire.

A great deal has been made out of the fact, if fact it is, as stated by the Interstate Commerce Commission, that 20,000,000 gallons of liquor are shipped annually into the nine prohibition States. A great deal *should* be made of it. One is, that every gallon carried into this territory was disposed of contrary to law, by law-breakers and criminals and anarchists, and that the United States furnished tax certificates to many of these anarchists, and gave them a form of protection and respectability in their criminal operations. This ought to be, and *must* be, stopped. No nation claiming a Christian civilization can afford to override or to discourage the moral aspirations and efforts of its people, especially as expressed in the regular form of State laws, as our nation is doing in encouraging anarchist liquor-dealers to break down the prohibition laws made in nine of our States for the protection of the homes and the people.

But another thing being made out of the fact of this importation of liquor into prohibition States is (and a most abject and discreditable thing it is) that prohibition does not prohibit, and, consequently, should be done away with! Why does it *not* prohibit? Because there are some criminals who are breaking the law, and some criminal officers who are not enforcing it, although they are under oath to do so, and are paid for doing so.

Their argument, however, is that, because some law-breakers break the law, they ought to be rewarded for their opposition to the law by having the law repealed.

But it is well to consider the proportions of this feature of the importation of 20,000,000 gallons of liquor into prohibition States. It means that the people of these nine States consume less than one gallon and a quarter per capita, while the per-capita consumption of the people of the other States is 25 gallons a year. Thus even the horrible conditions brought about in the prohibition States by boot-leggers and blind tigers and all other disreputable means for the anarchistic disposal of liquor are only one-twentieth as bad as in the other States, where the saloon is regulated and well ordered, and moral and lovely, and 25 gallons of liquor is consumed on an average by the people every year. The city of Chicago alone, with only 2,000,000 people, consumes 12 times as much liquor as 15,000,000 in the prohibition States consume.

If our good folks in Medina feel inclined, I should like to have extra copies printed for free distribution. They might open the eyes of the good people in Ohio who are making such haste to vote back the saloons because, as they are told, "prohibition does not prohibit."

"WET AND DRY" IN THE RECLAIMED COLORADO DESERT.

Mr. Root:—I have been very much interested in your temperance department, and think perhaps you will be interested in the fight which is now on in Imperial, between the good citizens and the saloon interests. Imperial County (which is the reclaimed Colorado Desert) has been dry since its birth; but a "local option" amendment to our State constitution, passed at the last election, takes the power of prohibition from the counties and gives it to towns; and the brewers of Los Angeles are taking advantage of this to try to force their abominable products upon Imperial Co. The full-page advertisement which I inclose will show you what pitiful arguments they put up in favor of their proposition. The "Progressive League" is composed of the "Pool Hall" and "Blind Pig" element of Imperial. The business men are, I think, without exception, opposed to the saloon. It is too bad that woman suffrage, which has just been passed at a special election, is not yet in force; for if the *women* of Imperial had a vote, the town and county would certainly *remain* dry.

El Centro, Cal., Oct. 24, 1911. D. P. BOTTROFF.

Then follows a full-page advertisement gotten up by the brewers to prove that a careful and well-regulated saloon is better than prohibition—that is, no saloon. Now if these liquor people would just point to a city that is prospering under the reign of the "well-regulated" saloon, it would be a curiosity.

"SLEDGE-HAMMER" BLOWS FOR TEMPERANCE; WHAT A METHODIST PREACHER SAYS.

A few weeks ago in the home of Mr. Wallace Gridley, of Edgewood, Cal. (a very enthusiastic bee-man), I read in your magazine a splendid temperance sermon for which I want to reach a fraternal hand across the country and say "shake! hurrah for you! do it again." Mr. Gridley, who is also a most ardent anti-saloon man, has since given me several copies of the same article in leaflet form, which I shall distribute, hoping and praying they will help us make California dry. It is an awful fight we are in; but such articles as I have mentioned will strike a blow like a veritable *sledge hammer*, God bless you! do it again.

Sisson, Cal., Aug. 1.

JOHN F. KELLGG.